FIRE STATION #1 AREA, SWMU 116 PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) SITE ASSESSMENT PROGRESS REPORT KENNEDY SPACE CENTER, FLORIDA

Prepared for:



National Aeronautics and Space Administration Kennedy Space Center, Florida

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Prepared by:

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Prepared for:
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National Aeronautics and Space Administration
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PROFESSIONAL ENGINEER CERTIFICATION

This Per- and Polyfluoroalkyl Substances (PFAS) Site Assessment Progress Report for the Fire Station #1 Area, Solid Waste Management Unit 116, Kennedy Space Center, Florida, dated January 2023, has been prepared by or under the responsible supervision, direction, or control of the Florida-licensed professional engineer whose signature and seal appear below. This document and the work described herein complies with standard professional practices and the requirements of Chapter 62-780, Florida Administrative Code (F.A.C.) and other rules of the Florida Department of Environmental Protection according to Rule 62-780.400(1), F.A.C.

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TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	Page
PROFESSION	AL ENGINEER CERTIFICATION	iii
TABLE OF CO	ONTENTS	v
ABBREVIATIO	ONS AND ACRONYMS	ix
EXECUTIVE S	SUMMARY	ES-1
SECTION I IN	TRODUCTION	1-1
1.1	OVERVIEW	
1.2	PURPOSE	
1.3	REPORT ORGANIZATION	1-2
SECTION II	SITE DESCRIPTION AND SETTING	2-1
2.1	SITE LOCATION	2-1
2.2	SITE DESCRIPTION	
2.2.1	Major Features	
2.2.2	Topography and Surface Features	
2.3	GEOLOGY AND HYDROGEOLOGY	
2.3.1	Regional Geology and Hydrogeology	
2.3.2	Local Geology and Hydrogeology	
2.4	SUMMARY OF PREVIOUS INVESTIGATIONS	
2.4.1	Previous RCRA Investigations	
2.4.2	Previous PFAS Investigations	2-4
SECTION III	PFAS SITE ASSESSMENT METHODOLOGIES AND AC	CTIVITIES3-1
3.1	PFAS SAMPLING PROTOCOL	3-1
3.2	PFAS SITE ASSESSMENT SAMPLING ACTIVITIES	3-2
3.2.1	Soil Sampling	3-2
3.2.2	DPT Groundwater Sampling	
3.2.3	Surface Water Sampling	
3.3	PFAS LABORATORY ANALYSIS	3-4
3.4	INVESTIGATION DERIVED WASTE	3-4
3.5	FIELD DATA QUALITY	3-5
SECTION IV	DATA EVALUATION	4-1

TABLE OF CONTENTS (Continued)

Section	<u>Title</u>	Page
4.1	DATA EVALUATION AND SCREENING PROCESS	4-1
4.2	SOIL	
4.3	GROUNDWATER	4-3
4.4	SURFACE WATER	
4.5	FIELD QA/QC EVALUATION	4-5
SECTION V	CONCLUSIONS AND RECOMMENDATIONS	5-1
5.1	CONCLUSIONS	
5.2	RECOMMENDATIONS	5-3
SECTION V	I REFERENCES	6-1
	LIST OF TABLES	
<u>Tab</u>	<u>le</u> <u>Title</u>	<u>Page</u>
2-1	Lithology Description	2-8
3-1	Soil Sample Locations and Rationale	
3-2	DPT Sample Locations and Rationale	
3-3	Monitoring Well Sample Locations and Rationale	
3-4	Surface Water Sample Locations and Rationale	
4-1	Site Assessment Soil Analytical Results	
4-2	Site Assessment Soil Frequencies of Detection	
4-3	Site Assessment DPT Groundwater Analytical Results	
4-4	Site Assessment DPT Groundwater Frequencies of Detection	
4-5	Site Assessment Monitoring Well Groundwater Analytical Results	
4-6	Site Assessment Montoring Well Groundwater Frequencies of Detection	
4-7 4-8	Site Assessment Surface Water Analytical Results	
	LIST OF FIGURES	
<u>Figu</u>	<u>Title</u>	<u>Page</u>
1-1	Location of Kennedy Space Center and Fire Station #1 Area	1-5
2-1	Site Layout	
2-2	Groundwater Flow Direction	
2-3	Historical PFAS Sample Locations	
3-1	PFAS Site Assessment Sample Locations	
4-1	PFAS Soil Results	4-29

TABLE OF CONTENTS (Continued)

<u>Figure</u>	<u>Title</u>	Page
4-2	Cumulative PFAS Groundwater Results	4-31
4-3	Site Assessment PFAS Surface Water Results	4-33
5-1	Proposed Sample Locations	5-5
	LIST OF APPENDICES	
APPENDIX A	HISTORICAL ANALYTICAL RESULTS	
APPENDIX B	FIELD DOCUMENTATION	
APPENDIX C	LABORATORY ANALYTICAL REPORTS	
APPENDIX D	PHOTOGRAPHIC LOG	
APPENDIX E	KSCRT MEETING MINUTES AND ACTION ITEM - OCT 2022	OBER

ABBREVIATIONS AND ACRONYMS

ADP Advance Data Package

AFFF Aqueous Film-Forming Foam

bls below land surface
CHP Central Heat Plant

CMS Communications, Maintenance, and Storage Facility

CS Confirmatory Sampling

DoD U.S. Department of Defense

DPT Direct Push Technology

F.A.C. Florida Administrative Code

FDEP Florida Department of Environmental Protection

FS1 Fire Station #1

ft feet or foot

HDPE High Density Polyethylene

HFPO-DA Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) [GenX]

HQ Hazard Quotient

IDW Investigation Derived Waste

IM Interim Measure

KSC Kennedy Space Center

KSCRT KSC Remediation Team

LC/MS/MS Liquid Chromatography Tandem Mass Spectrometry

LOC Location of Concern

NASA National Aeronautics and Space Administration

mg/kg milligram per kilogram

ng/L nanograms per liter

PAH Polycyclic Aromatic Hydrocarbon

PCB Polychlorinated Biphenyl

PFAS Per- and Polyfluoroalkyl Substances

PFBS Perfluoro-1-butanesulfonic acid

PFHxS Perfluorohexanesulfonic acid

ABBREVIATIONS AND ACRONYMS (Continued)

PFNA Perfluoro-n-nonanoic acid

PFOA Perfluoro-n-octanoic acid

PFOS Perfluorooctanesulfonic acid

pGCTL provisional Groundwater Cleanup Target Level

POL Paint and Oil Locker

PRL Potential Release Location

QA/QC Quality Assurance/Quality Control

QSM Quality Systems Manual

RCRA Resource Conservation and Recovery Act

RSL Regional Screening Level

SA Site Assessment

SAPR Site Assessment Progress Report

SOP Standard Operating Procedure

SRCO Site Rehabilitation Completion Order

SWMU Solid Waste Management Unit

SWSL Surface Water Screening Level

TOC Total Organic Carbon

μg/kg microgram per kilogram

USEPA United States Environmental Protection Agency

EXECUTIVE SUMMARY

This Per-and Polyfluoroalkyl Substances (PFAS) Site Assessment (SA) Progress Report (SAPR) presents the activities and results associated with PFAS investigation in the Fire Station #1 (FS1) Area located at Kennedy Space Center (KSC), Florida. FS1 (formerly known as Fire Station #4) has been designated Solid Waste Management Unit (SWMU) 116 under KSC's Resource Conservation and Recovery Act (RCRA) Corrective Action Program. This PFAS SA is being managed under SWMU 116 as the fire station was identified as the potential source of PFAS to the environment in this area. This is the first progress report to document on-going SA activities; supplemental progress reports will be provided as additional data is collected.

The SA for the FS1 Area covers an approximately 75-acre investigation area in the KSC Industrial Area with multiple numbered and unnumbered buildings. The primary focus of the PFAS SA at FS1 is the 10,000 square foot FS1 Building (M6-0695), which is surrounded by concrete, asphalt, gravel roadways, parking areas, and landscaped areas. The other buildings within the investigation area are associated with industrial activities at KSC.

Previous PFAS investigations included a Center-Wide Phase I SWMU Assessment and Confirmatory Sampling (CS) project conducted in 2018 and 2019 and a Center-Wide Phase II/III SWMU Assessment and CS project, completed in 2022. These investigations identified FS1 as Location of Concern (LOC) 19 because PFAS-containing aqueous film-forming foam (AFFF), which was historically stored at the fire station, is a potential PFAS source to the environment. The Phase I SWMU Assessment and CS activities included groundwater sampling, which confirmed detections of PFAS at the site with exceedances of the applicable screening criteria at the time. The Phase I concluded with the recommendation of further CS to evaluate the extent of impacted groundwater and assess potential surface soil impacts. The Phase II/III results showed similar PFAS compounds were in exceedance of applicable screening criteria in the groundwater, and PFAS were identified in soil samples. The Phase II/III evaluated PFAS signatures using forensics analysis, which indicated legacy (long chain) AFFF signatures in groundwater. There were several PFAS detected in groundwater at concentrations exceeding screening levels, including perfluorooctanesulfonic acid (PFOS), in excess of 100,000 nanograms per liter (ng/L).

The conclusion of the Phase II/III recommended that FS1 advance to a Site Assessment which is detailed in this SAPR.

During the SA, a total of six soil, 48 groundwater direct push technology (DPT), eight groundwater monitoring well, and one surface water sample were collected between October 2021 and March 2022. The samples were analyzed for 28 PFAS compounds using the Department of Defense Quality Systems Manual-compliant Method. SA sample results were used along with historical results to evaluate the extent of PFAS impacts to the environment in the FS1 Area. Data generated to date and prior results were screened against the United States Environmental Protection Agency (USEPA) May 2022 Tap Water Regional Screening Levels (RSLs) for groundwater and residential RSLs for soil (hazard quotient of 0.1). Surface water results were screened against the State of Florida Human Health Surface Water Screening Levels (SWSLs).

The six soil samples were collected from one location, FS1-SB0001, where a continuous soil core was advanced from 0 to 70 feet (ft) below land surface (bls) to evaluate lithology. Soil samples were collected at depths within the saturated zone (13-14, 19-20, 33-34, 46-47, 52-53, and 59-60 ft bls) and analyzed for PFAS and Total Organic Carbon (TOC). The soil core location was chosen to be near the FS1 building and co-located with a previous soil and groundwater sample location, PFAS-SB0059 and PFAS-DPT0069, which had elevated PFOS concentrations in soil in the 0-0.5 ft bls interval and in groundwater down to 47 ft bls. Soil results from FS1-SB0001 found that PFOS was the only compound that exceeded the soil RSL of 13 micrograms per kilogram (μ g/kg) with a maximum concentration of 110 μ g/kg in the saturated 33-34 ft bls interval, corresponding with groundwater results at this depth. TOC concentrations ranged from 590 to 7,400 milligrams per kilogram (μ g/kg) with the highest result in the 13-14 ft bls interval where the lithology was recorded as black, dark brown organic sand.

The 48 groundwater DPT samples were collected from six depth intervals (3-7, 10-14, 23-27, 33-37, 43-47, and 52-56) at eight locations (FS1-DPT0001 to FS1-DPT0008). Of the six PFAS compounds with applicable screening criteria, five were detected at concentrations greater than the USEPA RSLs: perfluoro-1-butanesulfonic acid (PFBS), perfluorohexanesulfonic acid (PFHxS), perfluoro-n-nonanoic acid (PFNA), perfluoro-n-octanoic acid (PFOA), and PFOS.

There were no detections of hexafluoropropylene oxide dimer acid (HFPO-DA) (commonly known as GenX) in the DPT samples (or any other samples collected during the SA). The location with the highest detected concentrations of the five compounds in excess of screening criteria was FS1-DPT0006, located approximately 400 feet southeast of the FS1 building. The sample with the maximum reported concentration of any PFAS was 100,000 ng/L of PFHxS in the 15-19 ft bls depth interval, greater than its RSL of 39 ng/L. Groundwater monitoring well samples were collected from seven existing wells associated with the Central Heat Plant (CHP) site (SWMU 045) and one existing well associated with the KSC Service Station (SWMU 093) in the north portion of the FS1 Area. These had concentrations of PFHxS, PFOA, and PFOS exceeding RSLs. PFOS was the most prevalent compound with exceedances in seven of the eight wells. Well CHP-MW0063, located just north of the FS1 building, had the maximum exceedances of PFHxS (90 ng/L), PFOA (16 ng/L), and PFOS (180 ng/L).

The surface water location (FS1-SW0001) sampled during the SA was from the stormwater swale located east of the FS1 building. PFOA and PFOS were detected at concentrations greater than SWSLs. The PFOA concentration was 1,200 ng/L, greater than the SWSL of 500 ng/L, and the PFOS concentration was 14,000 ng/L, greater than the SWSL of 10 ng/L.

A summary of samples collected during the SA are presented in the table below:

	PFOA	PFOS	PFBS	PFHxS	PFNA	HFPO-DA (GenX)
(USEPA) Soil RSLs (μg/kg)	19	13	1,900	130	19	23
Samples collected	6	6	6	6	6	6
No. of Detections	4	4	2	4	1	0
Results above RSL	0	2	0	0	0	0
(USEPA) Groundwater RSLs (ng/L)	6	4	600	39	5.9	6
Samples collected (DPT)	48	48	48	48	48	48
No. of Detections (DPT)	24	23	28	40	3	0
Results above RSL (DPT)	14	17	4	13	3	0
Samples collected (MW)	8	8	8	8	8	8
No. of Detections (MW)	7	8	7	8	1	0
Results above RSL (MW)	3	7	0	1	0	0
(Florida) Surface Water SWSLs (ng/L)	500	10	NA	NA	NA	NA
Samples collected	1	1	1	1	1	1
No. of Detections	1	1	1	1	1	0
Results above SWSL	1	1	NA	NA	NA	NA

NA = Not applicable; no screening criteria available

Overall, results from the SA showed exceedances of the applicable screening criteria for soil, groundwater and surface water. Considering the current and historical dataset, PFOS is the prevalent PFAS compound, which is indicative of AFFF releases. Based on results of the SA, additional groundwater DPT and surface water sampling should be considered, focused on evaluating surface water bodies in the southeast portion of the Industrial Area, which discharge into the Banana River. Additionally, installation of monitoring wells should be considered to evaluate the interaction between groundwater and surface water in the FS1 Area.

Results included in this report were presented to the KSC Remediation Team in October 2022.

An overall summary of samples collected to date in the FS1 Area with maximum concentrations is provided below:

	No. Samples Collected	PFOA	PFOS	PFBS	PFHxS	PFNA	HFPO- DA (GenX)
Phase I/II/III (2018-2022)			Maximun	Concentrat	ions (with loc	ation)	
Groundwater (ng/L)	69 (DPT)	15,000 (PFAS- DPT0120-010.0)	240,000 (PFAS- DPT0069-035.0)	4,200 (PFAS- DPT0120-035.0)	33,000 (PFAS-DPT0120- 025.0)	400 (PFAS- DPT0069- 010.0)	NA
Soil (µg/kg)	12	0.63 (PFAS-SB0058- 000.5)	45.4 (PFAS-SB0059- 000.5)	ND	2.3 (PFAS-SB0059- 000.5)	ND	ND
Surface Water (ng/L)	0	NA	NA	NA	NA	NA	NA
Sediment (µg/kg)	0	NA	NA	NA	NA	NA	NA
Site Assessment (2021-2022)		Maximum Concentrations (with location)					
Groundwater (ng/L)	48 (DPT) 8 (MW)	12,000 (FS1-DPT0006- 017.0)	27,000 (FS1-DPT0006- 012.0)	7,000 (FS1-DPT0006- 017.0)	100,000 (FS1-DPT0006- 017.0)	490 (FS1- DPT0006- 012.0)	ND
Soil (µg/kg)	6	1.5 (FS1-SB0001- 033.5)	110 (FS1-SB0001- 033.5)	0.55 (FS1-SB0001- 033.5)	9.4 (FS1-SB0001- 033.5)	0.39 (FS1- SB0001- 019.5)	ND
Surface Water (ng/L)	1	1,200 (FS1-SW0001)	14,000 (FS1-SW0001)	NA	NA	NA	NA

NA = Not applicable; not analyzed or no screening criteria

ND = Not detected

SECTION I INTRODUCTION

1.1 **OVERVIEW**

This Per- and Polyfluoroalkyl Substances (PFAS) Site Assessment (SA) Progress Report (SAPR) discusses the investigation activities and findings for the Fire Station #1 (FS1) Area (formerly known as Fire Station #4) located at Kennedy Space Center (KSC), Florida (Figure 1-1). This site has been designated Solid Waste Management Unit (SWMU) 116 under KSC's Resource Conservation and Recovery Act (RCRA) Corrective Action Program. This PFAS SA is being managed under SWMU 116 as the fire station was identified as a potential source of PFAS to the environment. For the purposes of PFAS investigations documented herein this report, the fire station will be referenced with its current designation, FS1. This PFAS SAPR was prepared by Tetra Tech, Inc., for the National Aeronautics and Space Administration (NASA) under Indefinite Delivery Indefinite Quantity Contract 80KSC019D0011-80KSC019F0070. This is the first progress report to document on-going SA activities; supplemental progress reports will be provided as additional data is collected.

A Center-Wide Phase I SWMU Assessment and Confirmatory Sampling (CS) project conducted in 2018 and 2019 (NASA, 2019) under Potential Release Location (PRL) 237 identified FS1 as Location of Concern (LOC) 19 because PFAS-containing aqueous film-forming foam (AFFF), which was historically stored at the fire station, is a potential PFAS source to the environment. There were no reported spills of AFFF at FS1. The Phase I SWMU Assessment and CS activities included groundwater sampling, which confirmed detections of PFAS at the site with exceedances of the applicable screening criteria at the time. The Phase I concluded with the recommendation of further sampling to evaluate the extent of impacted groundwater and assess potential surface soil impacts.

A Center-Wide Phase II/III SWMU Assessment and CS project (NASA, 2022) was completed in 2022 where additional sampling was conducted at KSC, including the FS1 Area (LOC 19), to continue investigation into potential PFAS releases. Similar to the Phase I, personnel interviews were conducted during the Phase II/III with FS1 firefighters that revealed AFFF products were

being stored at FS1, but there were no known AFFF spills within the area. Groundwater and soil samples were collected during the Phase II/III and results showed similar PFAS compounds were in exceedance of applicable screening criteria in the groundwater, and PFAS were identified in soil and sediment samples. The Phase II/III evaluated PFAS signatures using forensics analysis, which indicated legacy (long chain) AFFF signatures in groundwater. There were several PFAS detected in groundwater at concentrations exceeding screening levels, including perfluorooctanesulfonic acid (PFOS), in excess of 100,000 nanograms per liter (ng/L). The conclusion of the Phase II/III recommended that FS1 advance to a SA, which is detailed in this SAPR. Previous PFAS investigations are further discussed in Section 2.4, with historical results presented in Appendix A.

1.2 PURPOSE

The purpose of this report is to present the activities and results associated with the SA conducted in 2021-2022. The SA results along with the historical dataset is evaluated to provide recommendations and a path forward for further PFAS assessment at FS1.

1.3 REPORT ORGANIZATION

The remainder of this PFAS SAPR is organized as follows:

Section II: Site Description and Setting – Provides description of the site, including an overview of previous and current site operations, site topography, geology, and hydrogeology, and a summary of previous investigations.

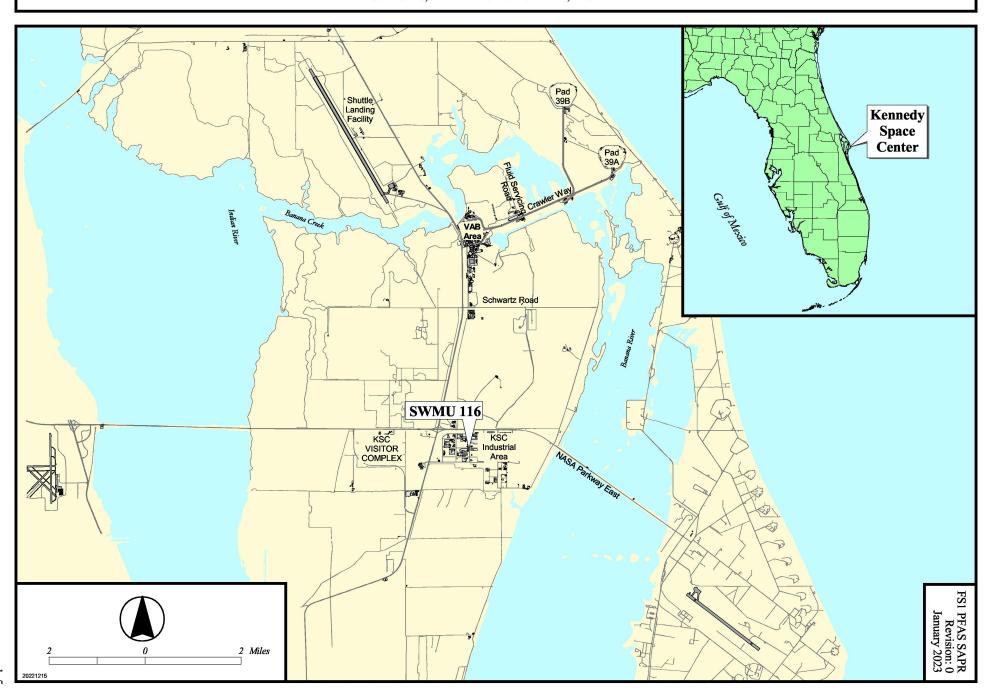
Section III: PFAS Site Assessment Methodologies and Activities – Presents the objectives, rationale, and methodologies used to accomplish the PFAS SA.

Section IV: Data Evaluation – Provides a summary of the screening process for soil, groundwater, and surface water samples collected during the PFAS SA.

Section V: Conclusions and Recommendations – Provides a summary of the PFAS Assessment results and recommendations for future investigations.

Section VI: References – Provides a listing of references cited in this report.

FIGURE 1-1 LOCATION OF KENNEDY SPACE CENTER AND FIRE STATION #1 AREA SWMU 116, KENNEDY SPACE CENTER, FLORIDA



SECTION II SITE DESCRIPTION AND SETTING

2.1 SITE LOCATION

The FS1 Area is located within KSC, on the East Coast of Florida in Brevard County (Figure 1-1). It is located on the southwestern corner of the intersection of 3rd Street Southeast and C Avenue Southeast in the Industrial Area.

2.2 SITE DESCRIPTION

2.2.1 Major Features

The FS1 Area covers an approximately 75-acre investigation area with multiple structures and buildings, as shown on Figure 2-1. The FS1 Area is currently developed and includes a 10,000 square foot Fire Station #1 Building (M6-0695), which is surrounded by concrete, asphalt, gravel roadways, parking areas, and landscaped areas. The fire station, which was constructed in 1964, has been the primary focus of the PFAS investigations because of potential PFAS releases. Other buildings and associated structures within the investigation area shown on Figure 2-1 primarily support industrial activities at KSC. These include the KSC Service Station (M6-0596); the Supply Warehouses #1 (M6-0794) and #2 (M6-0698); the Heavy Equipment Storage Shed (M6-0798A); the Transporter/Canister Facility (M7-0777); and, the Central Supply Facility (M6-0744).

2.2.2 Topography and Surface Features

The site topography around the FS1 building is relatively flat. Stormwater surface drainage flows away from the building and infiltrates into surface soils and vegetated areas along the edges of the building. There are drainage swales along the western and eastern areas of the site, in particular the swale located along the eastern portion of the site is along the east driveway in front of the fire truck bay doors. The overall study area has drainage swales primarily surrounding buildings and along roadways that ultimately discharge to the Banana River to the east.

2.3 GEOLOGY AND HYDROGEOLOGY

2.3.1 Regional Geology and Hydrogeology

The regional geology and hydrogeology have been documented in the Phase I SWMU Assessment and CS Report for PRL 237 (NASA, 2019). As noted in the report, the surface and near-surface deposits of east-central Florida range from surficial unconsolidated sands to well indurated limestones and dolomites at depth. Four distinct geologic units are characteristic of east-central Florida and are believed to exist at KSC. In ascending order these are: (i) Eocene limestones; (ii) Lower and Middle Miocene compact silt and clays; (iii) Upper Miocene and Pliocene silty and clayey sands; and (iv) Pleistocene and Recent aged sands with interbedded shell layers.

2.3.2 Local Geology and Hydrogeology

As part of this PFAS SA, the geology for FS1 was evaluated in December 2021 by collecting a soil core at FS1-SB0001, located along the east side of the FS1 building. The continuous soil core was collected from 0 to 70 feet (ft) below land surface (bls) and recorded in a boring log provided in Appendix B. Soil samples were collected from six depths and submitted to a laboratory for analysis of PFAS and Total Organic Carbon (TOC) as further discussed in Section 3.2.1 and Section 4.2. The lithology is described in Table 2-1 and summarized below.

The soil core evaluation indicated that the underlying lithology generally consists of primarily sand and shell down to approximately 50 ft bls and silts/clays to 70 ft bls. The upper 14 feet consists of black and dark brown, fine-grained sand with organics. From approximately 14-20 ft bls, the lithology consists of fine-grained brown sands. The intervals of 20-34 and 34-47 ft bls consist of gray fine-grained sand with shell fragments. From 47-53 ft bls, a gray clayey silt to silty clay layer was evident. From 53-60 ft bls, the lithology consists of dark gray sand with shells, and in the final depth evaluated, the 60-70 ft bls interval consists of gray green clayey silty sand and shells.

The hydrogeology at FS1 is presumed based on available information at surrounding sites where groundwater is being managed under KSC's RCRA Permit. The Central Heat Plant (CHP),

located to the north, is designated SWMU 045. Groundwater flow direction at the site is to the south in the shallow and intermediate zones and to the east in the deep zone. The area to the south of FS1 is the Paint and Oil Locker (POL) site, designated SWMU 067. Groundwater flow direction at the POL site is to the southeast. Groundwater flow in the area of the Communications, Maintenance, and Storage Facility (CMS) (SWMU 082), located to the southwest of FS1, has a westerly component in the shallow and intermediate zones, and a southwest component in the deep zone (NASA, 2021a). Groundwater flow at the Storage Warehouse 3 (SWMU 088) has a southwesterly flow direction (NASA, 2018). Based on these surrounding sites, groundwater flow in the FS1 study area is inferred to be generally southeast in the eastern and southern portions and southwest in the western portion (Figure 2-2).

2.4 SUMMARY OF PREVIOUS INVESTIGATIONS

2.4.1 Previous RCRA Investigations

The original investigation for FS1 was the SWMU Assessment for Fire Station No. 4 (M6-0695), PRL No. 122, completed in May 2005 (NASA, 2005). The SWMU Assessment gathered site information and ultimately identified eight LOCs for further investigation because past or present operations may have impacted the environment. The LOCs consisted of an Electrical Substation (LOC 1), North and East Garage Former Discharge Areas (LOCs 2 and 3), a Former Aboveground Storage Tank (LOC 4), a groundwater plume associated with the CHP site (SWMU C045) to the north (LOC 5), a Fire Extinguisher Storage and Maintenance Area (LOC 6), Water Tank Filling Spigot (LOC 7), and a Water Tank Filling Hydrant (LOC 8).

CS was conducted in 2005 to investigate potential contamination associated with the identified LOCs. Soil and groundwater samples were collected at select LOCs for analysis of polychlorinated biphenyls (PCBs), metals, volatile organic compounds, and petroleum constituents. Results indicated exceedances of cleanup criteria at four of the eight LOCs (LOCs 1, 2, 4, and 5) (NASA, 2006). Additional investigation activities were conducted at these four LOCs under a Phase II CS event, which resulted in a recommendation for No Further Action at LOCs 2, 4, and 5. At LOC 1, an Interim Measure (IM) was proposed to address concentrations of polycyclic aromatic hydrocarbons (PAHs) in soil and PCBs in soil and concrete of the

transformer pad greater than cleanup target levels. The IM was implemented in 2008, which included excavation and disposal of approximately 188 tons of waste soils, concrete, asphalt, and debris, and encapsulation of the concrete transformer pad (NASA, 2008). In 2014, the Florida Department of Environmental Protection (FDEP) issued a Site Rehabilitation Completion Order (SRCO) for the site (FDEP, 2014).

2.4.2 Previous PFAS Investigations

The previous PFAS investigations at FS1 are detailed in the Phase I SWMU Assessment and CS Report for PRL 237 (NASA, 2019) and the Phase II/III SWMU Assessment and CS Report for PRL 237 (NASA, 2022). These reports discuss the Center-wide PFAS investigations at KSC, under which FS1 was identified as LOC 19. These Phase I and Phase II/III reports, which represent the historical dataset, included groundwater and soil samples. No surface water or sediment samples were collected during these previous sampling events. At the time of previous investigations, groundwater results were being compared to the Provisional Groundwater Cleanup Target Levels (pGCTL) developed for the FDEP by the University of Florida in 2018. During the Phase I, only groundwater was collected, and the results were screened against the pGCTLs, which were consistent with the 2016 United States Environmental Protection Agency (USEPA) Lifetime Drinking Water Health Advisory levels of 70 ng/L for perfluoro-n-octanoic acid (PFOA) and PFOS individually, and 70 ng/L for the sum of PFOA and PFOS (USEPA, 2016a and 2016b). In February 2021, the FDEP published the PFAS Dynamic Plan (updated in March 2022 [FDEP, 2022)]), which included provisional screening levels for PFOA and PFOS in groundwater, irrigation water, surface water, and soil. There were no applicable screening levels for sediment. The groundwater and soil samples collected during the Phase II/III were compared to these provisional screening levels in the Dynamic Plan.

After the Phase I and Phase II/III investigations, in May 2022, the USEPA issued updated Tap Water Regional Screening Levels (RSLs) for PFOA, PFOS, and perfluoro-1-butanesulfonic acid (PFBS), and included RSLs for additional PFAS compounds including perfluorohexanesulfonic acid (PFHxS), perfluoro-n-nonanoic acid (PFNA), and hexafluoropropylene oxide dimer acid (HFPO-DA), commonly referred to as GenX.

Historical results for each media are included in Tables A-1 through A-3 in Appendix A. Historical PFAS sample locations are presented on Figure 2-3. The historical dataset included in Appendix A has been re-screened and compared to the May 2022 USEPA RSLs for groundwater and soil. These results were re-screened against the updated criteria because these are being used as project screening levels for this SA, as further discussed in Section 4.1. The tables in Appendix A are organized to present the PFAS with applicable screening criteria at the top of the tables. The following summary refers to the historical results compared to the updated screening levels.

During the Phase I in 2018-2019, groundwater samples were collected to evaluate the potential PFAS impacts associated with the site. A total of 43 direct push technology (DPT) groundwater samples were collected from nine locations, with 19 samples collected in October and November 2018 (DPT0063, DPT0066 to DPT0069) and 16 samples collected in March 2019 (DPT0117, DPT0120, DPT0122, and DPT0141).

A re-screening of historical DPT groundwater results collected during Phase I showed five PFAS compounds (PFBS, PFHxS, PFNA, PFOA, and PFOS) greater than the RSLs. HFPO-DA was not analyzed for in these samples. The location of the maximum concentration of PFBS was at PFAS-DPT0120 in the 33-37 ft bls interval; the maximum concentration of PFHxS was at PFAS-DPT0120 in the 23-27 ft bls interval; the maximum concentration of PFNA was at PFAS-DPT0069 in the 8-12 ft bls interval; the maximum concentration of PFOA was at PFAS-DPT0120 in the 8-12 ft bls interval; and, the maximum concentration of PFOS was at PFAS-DPT0069 in the 33-37 ft bls interval. The highest detected concentration overall was PFOS at 240,000 ng/L at PFAS-DPT0069 (previously reported as 244,900 ng/L for the sum of PFOA and PFOS), located on the east side of the FS1 building. The other location with highest detections, PFAS-DPT0120, is about 40 feet east of PFAS-DPT0069. Both locations are centrally located at FS1, and overall have the highest detections in the dataset. As noted in the Phase I report, additional sampling was proposed to better define the extent of the impacted groundwater and to assess potential surface soil impacts from potential AFFF use and/or herbicide use.

During Phase II/III in 2021-2022, groundwater and soil samples were collected to continue to evaluate potential impacts of PFAS at FS1. In January 2021, a total of 12 groundwater samples

were collected from three DPT locations (DPT0184 to DPT0186) and eight soil samples were collected from four locations (SB0057 to SB0060, co-located with previous DPT locations from Phase I, DPT0066 to DPT0069). A re-screening of the soil results revealed PFOS at two locations (SB0058 and SB0059) at concentrations greater than the RSL of 13 micrograms per kilogram (μ g/kg). As shown in Table A-1, the maximum detection was 49.1 ug/kg, in the 0-0.5 ft bls depth interval at SB0058 (result was from a sample duplicate), located to the south of the FS1 building. A similar concentration of PFOS (45.4 μ g/kg) was detected in the 0-0.5 ft bls interval at SB0059, located to the east of the FS1 building.

DPT groundwater results showed four PFAS compounds (PFHxS, PFNA, PFOA, and PFOS) in exceedance of the RSLs (HFPO-DA was not analyzed for in the January 2021 DPT samples). The highest detections for these compounds were detected at PFAS-DPT0185 between the 6-10 ft bls and 21-25 ft bls intervals. The highest detections were 896 ng/L for PFHxS, 64.6 ng/L for PFNA, 349 ng/L for PFOA, and 3,180 ng/L for PFOS. PFAS-DPT0185 is located south of the FS1 building, and approximately 275 ft south of PFAS-DPT0069 and PFAS-DPT0120 where the highest concentrations were detected during Phase I. PFAS-DPT0186 is located as an eastern step-out from these locations, approximately 125 feet east of the FS1 building, and results showed exceedances of PFHxS, PFOA, and PFOS. The furthest historical DPT sample was PFAS-DPT0063 located approximately 0.3 miles east of PFAS-DPT0186. Results at this location showed low-level PFAS exceedances of PFOA and PFOS. PFAS-DPT0184 is located as a western step-out from this location and results showed relatively lower concentrations, but still showed one exceedance of PFOS of 7.9 ng/L at the 6-10 ft bls interval.

Surrounding DPT groundwater data was also incorporated into the FS1 dataset to support delineation. These results are included in Table A-2. The additional data includes DPT0233 and DPT0234, which were collected in September 2021 as part of the Phase II/III, and S014-DPT1003, which was collected in February 2022 as part of a PFAS sampling event at the Base Operations Support Building (SWMU 014), formerly known as the Maintenance and Operations Building. PFAS-DPT0233 is located at the northeast of FS1. Results at this location showed one exceedance of PFOS (13 ng/L) in the 6-10 ft bls interval. PFAS-DPT0234 is located southwest, approximately 700 feet from the FS1 building, and results showed one exceedance of PFOS (6.8

ng/L) in the 6-10 ft bls interval. Further west from PFAS-DPT0234 is S014-DPT1003 (approximately 550 feet west) and results showed low-level exceedances of PFNA, PFOA, and PFOS. PFOS exceeded the RSL in the 23-27 ft bls while exceedances of all three compounds were observed in the 43-47 ft bls interval.

Soil samples PFAS-SB0125 and PFAS-SB0126 were sampled in September 2021 at locations colocated with DPT samples PFAS-DPT0233 and PFAS-DPT0234, respectively. Two samples were collected from each location in the 0-0.5 ft bls and 0.5-2 ft bls depth intervals. A rescreening of the soil results showed no exceedances of screening levels.

Monitoring well results were also incorporated into the dataset for FS1 and are provided in Table A-3. The data incorporates PFAS results from four monitoring wells at the CMS sampled in June 2021 (CM_S-MW0036, CM_S-MW0037, CM_S-0038, and CM_S-MW0048). Generally, the monitoring wells sampled at CMS were used to help delineate the western boundary. Results from the CMS wells show relatively low-level exceedances of PFOS, and no exceedances of other PFAS compounds. The PFOS concentrations ranged from 3.77 ng/L to 56 ng/L with the maximum detection located at CM_S-MW0037. The monitoring well screen intervals were all 5 to 15 ft bls.

The Phase II/III project also included forensic analysis of groundwater data to identify common PFAS mixture signatures. The investigation concluded that PFAS detections in groundwater showed a signature of potential legacy (long chain) AFFF and that deep (43 ft bls depth interval) groundwater impacts were identified. The conclusion of the Phase II/III included the recommendation that FS1 advance to Site Assessment.

Table 2-1. Lithology Description

Location	Depth (ft bls)	Description			
	0 - 14	Black and dark brown organic rich fine sands with traces of silt			
	14 - 20	Brown fine sands, transitions to gray			
	20 - 34	Gray fine sands with traces of shell			
FS1-SB0001	34 - 47	Gray sand and shells (> 50%)			
	47 - 53	Gray clayey silt to silty clay			
	53 - 60	Dark gray sand and crushed shells			
	60 - 70	Gray green clayey silty sand and shells			

ft bls = feet below land surface

FIGURE 2-1 SITE LAYOUT SWMU 116, KENNEDY SPACE CENTER, FLORIDA

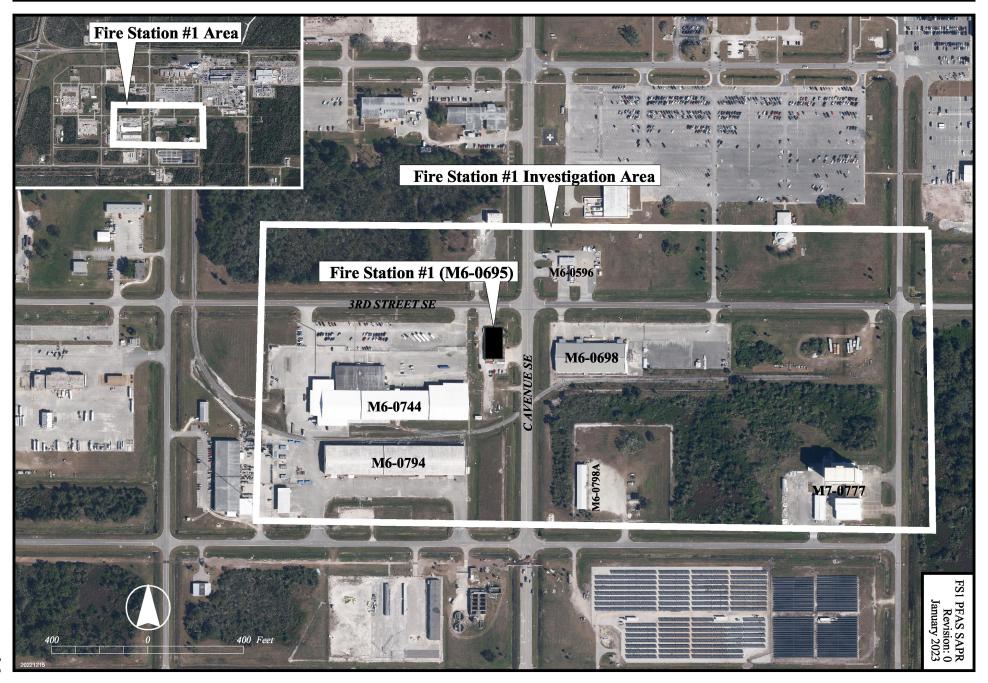


FIGURE 2-2 GROUNDWATER FLOW DIRECTION SWMU 116, KENNEDY SPACE CENTER, FLORIDA

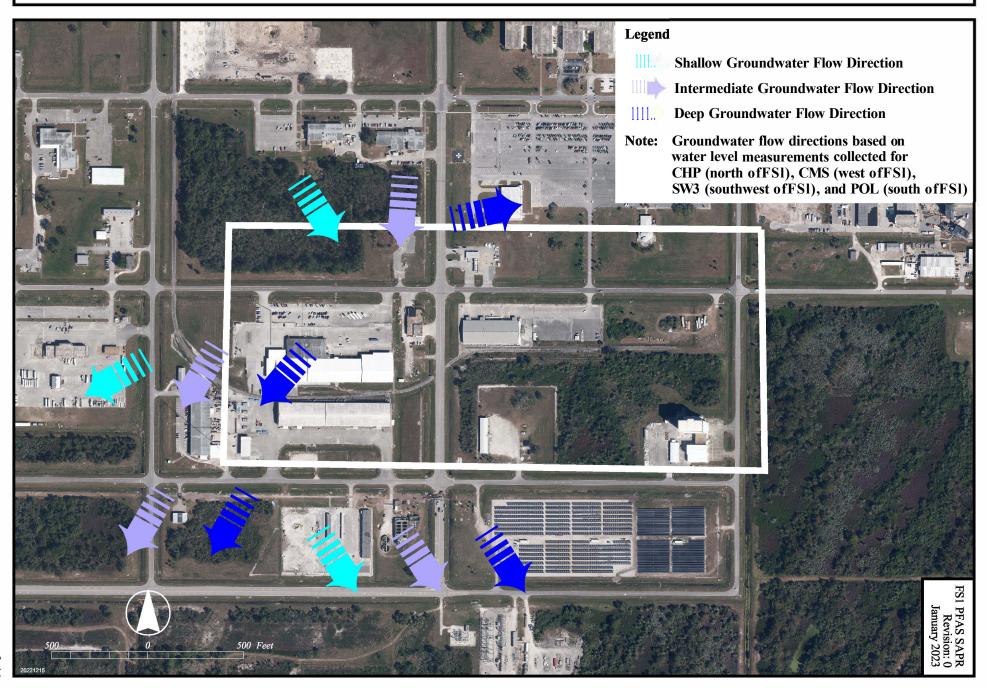
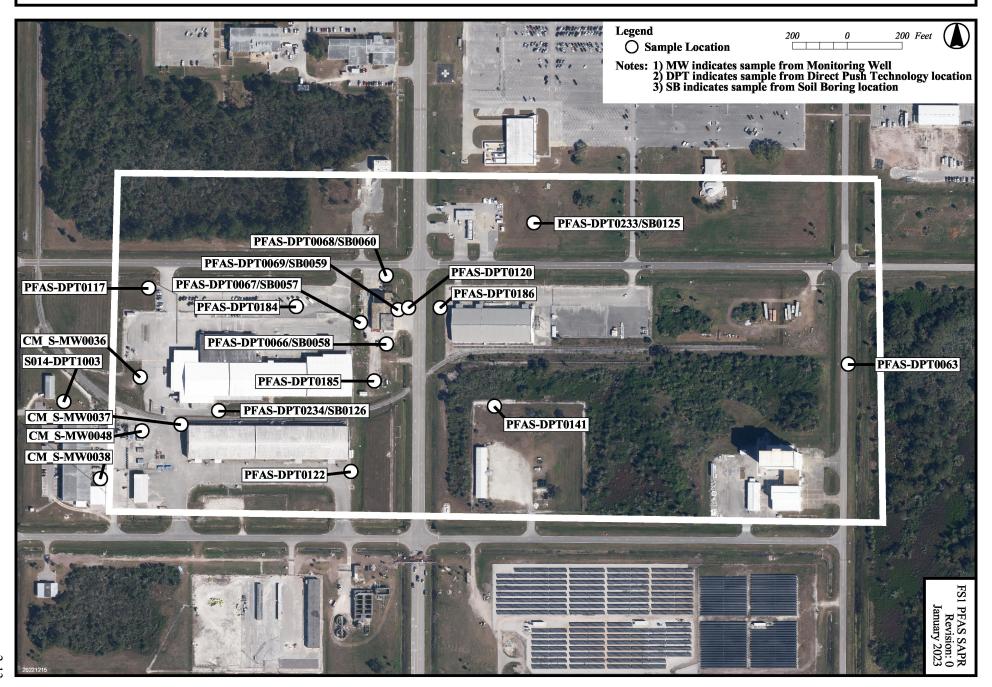


FIGURE 2-3 HISTORICAL PFAS SAMPLE LOCATIONS SWMU 116, KENNEDY SPACE CENTER, FLORIDA



SECTION III

PFAS SITE ASSESSMENT METHODOLOGIES AND ACTIVITIES

Based on findings of the Center-wide PFAS Phase II and III SWMU Assessment and CS (NASA, 2022), additional sampling was conducted in the FS1 Area between October 2021 and March 2022 to supplement the existing dataset and further characterize PFAS impacts to the environment. PFAS sampling locations are shown on Figure 3-1. Activities conducted during the FS1 PFAS SA included:

- Collection of a continuous soil core to 70 ft bls to evaluate lithology, with collection of grab samples from six depth intervals for PFAS and TOC analysis in support of site characterization;
- Collection of DPT groundwater samples at six depth intervals from eight boring locations (total of 48 DPT samples) for PFAS analysis;
- Collection of groundwater samples from eight existing upgradient monitoring wells for PFAS analysis; and
- Collection of one surface water sample for PFAS analysis.

3.1 PFAS SAMPLING PROTOCOL

PFAS are present in many consumer products (including some typical sampling equipment) and are widely present in the environment. Therefore, special precautions were followed to avoid compromising sampling integrity during collection. Field sampling methodologies were conducted in accordance with applicable portions of the KSC Sampling and Analysis Plan (NASA, 2017), FDEP Standard Operating Procedures (SOPs) for groundwater, surface water, and soil (FDEP, 2017), and applicable portions of the FDEP draft PFAS Sampling SOP (FDEP, 2019). Field quality assurance/quality control (QA/QC) samples were also collected to evaluate potential PFAS cross-contamination in site samples, as further discussed in Section 3.5.

3.2 PFAS SITE ASSESSMENT SAMPLING ACTIVITIES

The following sections discuss the PFAS sampling activities conducted during the SA.

3.2.1 Soil Sampling

On December 10, 2021, a continuous soil core (FS1-SB0001) was advanced to 70 ft bls using a Geoprobe 8140LS Sonic drill rig to evaluate the site's lithology and determine the best placement for DPT groundwater sample intervals. The soil core was co-located with a soil boring location previously collected in January 2021 as part of the Phase II/III (PFAS-SB0059) and DPT groundwater location previously collected in October 2018 as part of the Phase I (PFAS-DPT0069). This location was chosen for evaluation because it is located alongside (east of) the FS1 building and had a maximum soil concentration of PFOS of 45.4 µg/kg in the 0-0.5 ft bls interval and maximum groundwater concentration of PFOS of 240,000 ng/L in the 33-37 ft bls interval.

Lithologic descriptions were recorded, as described in Section 2.3.2, and grab samples were collected from the soil core at six discrete 1-foot depth intervals (13-14 ft bls, 19-20 ft bls, 33-34 ft bls, 46-47 ft bls, 52-53 ft bls, and 59-60 ft bls) for laboratory analysis of PFAS and TOC. Soil sampling locations and rationale are presented in Table 3-1 and shown on Figure 3-1. The soil boring log for FS1-SB0001 is included in Appendix B.

3.2.2 DPT Groundwater Sampling

In February 2022, DPT groundwater samples were collected from eight locations (FS1-DPT0001 through FS1-DPT0008) at six depth intervals (3-7 ft bls, 10-14 ft bls, 15-19 ft bls, 23-27, 33-37 ft bls, and 43-47 ft bls), for a total of 48 DPT groundwater samples. The sample locations were selected in areas around the site to provide a wide step-out from the historical groundwater samples collected during the Phase I and Phase II/III events. The four-foot screen intervals were selected based on the lithology observed in the continuous soil core collected from FS1-SB0001 in December 2021. DPT groundwater sampling locations and rationale are presented in Table 3-2 and shown on Figure 3-1.

At each DPT groundwater sample location, the upper 5 feet of soil was excavated using a stainless-steel hand auger to verify the absence of underground utilities. Groundwater grab samples were collected by DPT methods via a 4-foot-long stainless-steel retractable screen. New high-density polyethylene (HDPE) tubing was used for each sampling location. When the desired sampling depth was reached, the tubing was placed into the borehole through the sampling rods at mid-screen, and the groundwater was purged with a peristaltic pump for a minimum of five screen volumes (approximately 1.5 liters) prior to sample collection. During sample purge, observations including odor and color were recorded prior to collecting each sample. Upon completion, each sample borehole was abandoned via pressure grouting techniques. DPT groundwater samples were placed in laboratory-provided sample containers, sealed, labeled, packed on ice, and delivered under proper chain-of-custody protocol to the laboratory. DPT groundwater sample logs are provided in Appendix B.

3.2.3 Monitoring Well Groundwater Sampling

In October 2021, eight existing monitoring wells located upgradient in the northern portion of the FS1 Area were sampled. Seven of the wells are associated with the CHP site (SWMU 045) (CHP-MW0028, CHP-MW0029, CHP-MW0032, CHP-MW0033, CHP-MW0034, CHP-MW0035, and CHP-MW0063). The other well is associated with the KSC Service Station (SWMU 093) (CGO-MW0012). All the wells are located north of 3rd Street Southeast except for CHP-MW0063, which is located immediately south of 3rd Street in the grass to the east of the FS1 driveway. The wells range in depth with screen intervals between 2.5-12.5 ft bls to 40-50 ft bls. Monitoring well locations and rationale are presented in Table 3-3 and shown on Figure 3-1.

New HDPE tubing was used for each sample location. The monitoring wells were sampled using a peristaltic pump and flow through cell utilizing a low-flow purge technique. Water quality parameters were recorded at each location. Monitoring well samples were placed in laboratory-provided sample containers, sealed, labeled, packed on ice, and delivered under proper chain-of-custody protocol to the laboratory. Monitoring well sampling logs are provided in Appendix B.

3.2.4 Surface Water Sampling

In March 2022, one surface water sample was collected from the drainage swale along the east side of the fire station (FS1-SW0001). A grab sample was collected from the mid-point of the standing water location using a pre-cleaned pole-mounted scoop. Water quality parameters were collected using a peristaltic pump equipped with a flow-through cell through HDPE tubing attached to a sample collection pole. Surface water location and rationale are presented in Table 3-4 and on Figure 3-1. The surface water sample log is provided in Appendix B.

3.3 PFAS LABORATORY ANALYSIS

All collected soil, groundwater, and surface water samples were shipped under chain-of-custody to Pace Laboratories in West Columbia, South Carolina, a National Environmental Laboratory Accreditation Program-certified laboratory. The PFAS samples were analyzed by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS) Compliant with Table B-15 of the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) version 5.3. A list of 28 PFAS analytes were reported. The soil samples collected from the soil core were also analyzed for TOC by the Walkley-Black Method. Note the analytical method used for this SA included a more robust list of PFAS compounds than the method utilized during the prior investigations.

3.4 INVESTIGATION DERIVED WASTE

Investigation-derived waste (IDW) generated during the SA included soil cuttings, sampling purge water, and decontamination fluids. The soil core was evaluated, samples were collected for PFAS analysis, and the soil cuttings were determined to be non-hazardous per NASA's PFAS IDW policy (NASA, 2021b). The aqueous IDW was containerized into totes, characterized, and determined to be non-hazardous prior to being transferred to KSC's on-site IDW treatment system, per NASA's PFAS IDW policy. Miscellaneous trash, construction debris, and personal protective equipment generated during field activities was wiped clean and disposed of in an appropriate trash container.

3.5 FIELD DATA QUALITY

QA/QC samples were collected for PFAS analysis throughout the duration of the SA and included field blanks at a frequency of one per day, equipment blanks at a frequency of one per reusable equipment type, sample duplicates at a ratio of approximately one per 10 samples, and matrix spikes at a ratio of approximately one per 20 samples. The QA/QC samples were collected in accordance with FDEP SOP FQ 1000 (Field Quality Control Requirements) (FDEP, 2017). The field blanks were collected by transferring laboratory-provided PFAS-free water into proper laboratory provided containers. The equipment blanks were collected from sampling equipment such as HDPE tubing and decontaminated stainless-steel Geoprobe sampler screens. Analytical results for the field QC samples are presented in Section 4.

Table 3-1. Soil Sample Locations and Rationale

Location (FS1-)	Sample Identification	Sample Depth (ft bls)	Sampling Rationale
	FS1-SB0001-013.5-20211210	13 - 14	
	FS1-SB0001-019.5-20211210	19 - 20	
CD0001	FS1-SB0001-033.5-20211210	33 - 34	Soil core to evaluate lithology and best placement of
SB0001	FS1-SB0001-046.5-20211210	46 - 47	groundwater sample screen intervals
	FS1-SB0001-052.5-20211210	52 - 53	
	FS1-SB0001-059.5-20211210	59 - 60	

Note:

Samples analyzed for 28 PFAS compounds by LC/MS/MS Compliant with QSM 5.3 Table B-15 Samples were also analyzed for Total Organic Carbon (TOC)

ft bls = feet below land surface

PFAS = per- and polyfluoroalkyl substances.

Table 3-2. DPT Sample Locations and Rationale

Location	Sample Depth				
(FS1-)	(ft bls)	Sampling Rationale			
	3 - 7				
	10 - 14				
D.P.TOOO1	15 - 19	Northern delineation location near the Central Heat Plant site			
DPT0001	23 - 27				
	33 - 37				
	43 - 47				
	3 - 7				
	10 - 14				
DPT0002	15 - 19	Northwestern delineation location			
DF 10002	23 - 27	Northwestern defineation location			
	33 - 37				
	43 - 47				
	3 - 7				
	10 - 14				
DPT0003	15 - 19	Northern delineation location			
2110003	23 - 27				
	33 - 37				
	43 - 47				
	3 - 7				
	10 - 14				
DPT0004	15 - 17	Evaluate area between previous locations PFAS-DPT0233 and PFAS-DPT0068			
	23 - 27	•			
	33 - 37				
	43 - 47				
	3 - 7				
	10 - 14				
DPT0005	15 - 19 23 - 27	Eastern delineation location			
	33 - 37				
	43 - 47				
	3 - 7				
	10 - 14				
	15 - 19				
DPT0006	23 - 27	Evaluate between previous locations PFAS-DPT0141 and PFAS-DPT0185			
	33 - 37				
	43 - 47				
	3 - 7				
	10 - 14				
DPT0007	15 - 19	E 1			
	23 - 27	Evaluate area northeast of previously collected DPT sample PFAS-DPT0122			
	33 - 37				
	43 - 47				
	3 - 7				
	10 - 14				
DPT0008	15 - 19	Southeastern delineation location			
DI 10000	23 - 27				
	33 - 37				
	43 - 47				

Samples analyzed for 28 PFAS compounds by LC/MS/MS Compliant with QSM 5.3 Table B-15

ft bls = feet below land surface

PFAS = per- and polyfluoroalkyl substances

Table 3-3. Monitoring Well Sample Locations and Rationale

Well ID	Screen Interval (ft bls)	Sampling Rationale	
CGO- MW0012	2.5 - 12.5		
CHP- MW0028	40 - 45		
CHP- MW0029	40 - 45		
CHP- MW0032	42.5 - 47.5	Exising well located upgradient in the northern portion of the FS1 Area	
CHP- MW0033	32.5 - 37.5	Existing well recated approaches in the northern portion of the 151 rica	
CHP- MW0034	22.5 - 27.5		
CHP- MW0035	3 - 13		
CHP- MW0063	40 - 50		

Samples analyzed for 28 PFAS compounds by LC/MS/MS Compliant with QSM 5.3 Table B-15

ft bls = feet below land surface

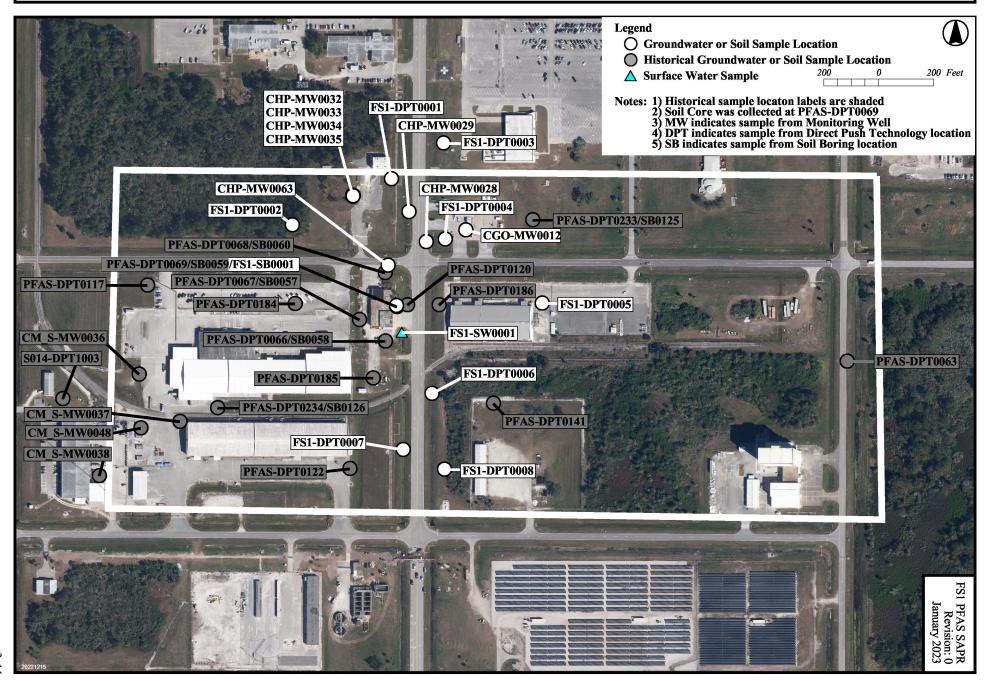
PFAS = per- and polyfluoroalkyl substances

Table 3-4. Surface Water Sample Locations and Rationale

Location (FS1-)	Sample Depth (ft bls)	Sampling Rationale
SW0001	0 - 0.5	Evaluate surface water in drainage swale near the southeast corner of the Fire Station #1 building

Samples analyzed for 28 PFAS compounds by LC/MS/MS Compliant with QSM 5.3 Table B-15. PFAS = per- and polyfluoroalkyl substances.

FIGURE 3-1 PFAS SITE ASSESSMENT SAMPLE LOCATIONS SWMU 116. KENNEDY SPACE CENTER, FLORIDA



SECTION IV DATA EVALUATION

4.1 DATA EVALUATION AND SCREENING PROCESS

In May 2022, the USEPA issued updated RSLs, calculated using a Hazard Quotient (HQ) of 0.1, for PFOA, PFOS, and PFBS, and included RSLs for additional PFAS compounds including PFHxS, PFNA, and HFPO-DA (GenX) (USEPA, 2022). In November 2022, the USEPA RSL tables were updated, but there were no changes to the PFAS screening levels. The USEPA RSLs for Tap Water and Residential Soil were used as project screening levels for this assessment.

The State of Florida developed provisional cleanup target levels for PFAS in various media, as described in the FDEP Dynamic Plan (FDEP, 2022). The published surface water screening levels (SWSLs) for Human Health in freshwater and marine environments for PFOA and PFOS were used as project screening levels for this assessment. Florida currently does not have SWSLs for other PFAS compounds or screening levels for sediment.

Project screening levels for each media sampled during this assessment are presented in the analytical data tables and listed below:

Chemical	Soil RSL¹ (µg/kg)	Groundwater RSL ² (ng/L)	Surface Water SWSL ³ (ng/L)
HFPO-DA (GenX)	23	6	NA
PFBS	1,900	600	NA
PFHxS	130	39	NA
PFNA	19	5.9	NA
PFOA	19	6	500
PFOS	13	4	10

- (1) USEPA residential soil RSLs based on HQ of 0.1.
- (2) USEPA Tap Water RSLs based on HQ of 0.1.
- (3) State of Florida screening levels for human health in freshwater and marine environments
- NA Not applicable; no screening criteria

4.2 SOIL

Six soil samples were collected from one location (FS1-SB0001) in December 2021 to evaluate PFAS at FS1. The soil results collected during the SA are summarized in Table 4-1 and presented

on Figure 4-1. The results are organized to present the six compounds with USEPA RSLs at the top of the table for comparison to the applicable screening criteria. The frequencies of detection along with the maximum detected concentrations for all 28 analyzed compounds are presented in Table 4-2. In addition to the PFAS compounds analyzed, TOC was analyzed in all soil samples to further characterize the soil. The laboratory report for all soil data collected in December 2021 is included in Appendix C. The soil results are further discussed and evaluated below.

Six soil samples were collected from one boring location, FS1-SB0001, where a continuous soil core was advanced from 0 to 70 ft bls to evaluate the lithology of the area and determine the best placement for DPT groundwater sample screen intervals. The soil boring location was placed on the east side of the FS1 building, and co-located with a previously collected soil sample from 2021 that had an elevated concentration of PFOS (45.4 μg/kg) in the 0-0.5 ft bls interval, and also with the previous DPT boring completed to 47 ft bls in 2018 with elevated groundwater concentrations (maximum PFOS concentration of 240,000 ng/L at 33-37 ft bls). The grab samples were collected from 1-ft sample intervals at 13-14 ft bls, 19-20 ft bls, 33-34 ft bls, 46-47 ft bls, 52-53 ft bls, and 59-60 ft bls. Out of the six PFAS compounds with applicable screening criteria, PFOS was the only compound that exceeded the RSL. PFOS exceeded the RSL at two sample depths in the saturated zone including 19-20 ft bls and 33-34 ft bls where the concentrations were 29 µg/kg and 110 µg/kg, respectively. As shown in Table 4-2, a total of 13 out of the 28 PFAS compounds analyzed were detected above the method detection limit. All PFAS compounds with screening criteria were detected with exception of HFPO-DA. The results also showed that higher soil PFAS concentrations were found in shallower depths compared to the deeper depths where no detections occurred at 52-53 ft bls and 59-60 ft bls. In review of historical groundwater results from co-located DPT location, PFAS-DPT0069, groundwater exceedances were also identified in similar intervals where soil exceedances were observed in FS1-SB0001.

TOC was analyzed at each of the six soil samples collected at FS1-SB0001. TOC was analyzed to further characterize the soil and to provide evidence of environmental partitioning and adsorption of PFAS compounds on soil organic carbon. The concentration of TOC ranged across all samples from 590 to 7,400 milligrams per kilogram (mg/kg). The highest result was found at

13-14 ft bls where the lithology was recorded to be black, dark brown organic sand from 0-14 ft bls. The second highest result (4,200 mg/kg) was found at 19-20 ft bls where the lithology transitions into a brown sand from 14-20 ft bls. At deeper depths between 33 to 60 ft bls, the TOC concentration ranged from 590 to 1,300 mg/kg. Additionally, the lithologies in the deeper depths were dominantly gray with no evidence of organic staining (black or brown) noted. Overall, TOC results were higher when evidence of organics were noted and lower when they were absent (which is to be expected). Compared to the PFAS concentrations found in soil, the higher TOC found in the shallower intervals loosely correlated with higher PFAS concentrations observed at the same depths. A similar relationship was not observed in the deeper samples. This suggests that PFAS does not generally correlate to TOC though a more robust database may be needed to determine if a correlation occurs. The elevated levels of TOC potentially contribute to higher adsorption of PFAS compounds to the soil and conversely to less potential leaching of PFAS from soil to groundwater.

4.3 GROUNDWATER

There were 48 DPT groundwater samples collected from eight locations (FS1-DPT0001 to FS1-DPT0008) in February 2022. Four field duplicates were also collected during the field event. The DPT results collected as part of this SA are summarized in Table 4-3 and presented on Figure 4-2. The frequencies of detection along with maximum detected concentrations for all 28 analyzed compounds are presented in Table 4-4. The laboratory reports for all groundwater data collected are included in Appendix C. The groundwater results are further discussed and evaluated below.

Of the six compounds with applicable screening criteria, five were detected at concentrations greater than the USEPA RSLs. There were no detections of HFPO-DA (GenX). The location with the highest detected concentrations of the five compounds in excess of screening criteria was FS1-DPT0006, located approximately 400 feet southeast of the FS1 building. As shown in Table 4-4, the maximum detections for the five compounds with screening criteria were from the sample depths of 10-14 and 15-19 ft bls, and the maximum reported concentration of any PFAS was 100,000 ng/L of PFHxS at 15-19 ft bls, greater than the RSL of 39 ng/L. As shown in Table 4-3, all FS1 DPT locations had an exceedance of the RSL except FS1-DPT0005, which is located approximately 600 feet east of the FS1 building. Field duplicates were collected from FS1-

DPT0003 at 15-19 ft bls, FS1-DPT0004 at 10-14 ft bls, FS1-DPT0005 at 33-37 ft bls, and FS1-DPT0007 at 23-27 ft bls. The results included in Table 4-3 show that the duplicates were comparable to the parent samples.

PFAS concentrations generally decreased vertically with sample depth; however, low-level exceedances of PFOS were observed in the 43-47 ft bls interval at FS1-DPT0006 (6.8 ng/L) and FS1-DPT0007 (7.6 ng/L). The higher magnitude exceedances were located at FS1-DPT0006 and FS1-DPT0007, which are approximately 250 feet apart from each other. Both are located south of the FS1 building, which correlates with the southernly direction of groundwater flow at the site. In review of the collective dataset, the historical data generally correlates with the current DPT data with higher-level exceedances located near the FS1 building (e.g., PFAS-DPT0069 and PFAS-DPT0120) and fewer exceedances in locations downgradient of the FS1 building (e.g., PFAS-DPT0122).

There were eight groundwater samples collected during this SA from existing monitoring wells located upgradient in the northern portion of the FS1 Area. The monitoring well results are summarized in Table 4-5 and presented on Figure 4-2. The frequencies of detection along with the maximum detected concentration for all 28 analyzed compounds are presented in Table 4-6. The laboratory reports for all groundwater data collected are included in Appendix C.

In the monitoring well samples, four of the six PFAS with USEPA RSLs were detected, but only PFHxS, PFOA, and PFOS were detected at concentrations greater than RSLs. PFHxS was detected at a concentration of 90 ng/L in well CHP-MW0063, greater than the RSL of 39 ng/L. PFOA was detected in three of the wells at concentrations greater than the RSL of 6 ng/L, with results ranging from 7.8 ng/L in well CHP-MW0029 to 16 ng/L in well CHP-MW0063. PFOS was detected in seven of the eight wells at concentrations greater than the RSL of 4 ng/L, with results ranging from 4.7 ng/L in well CHP-MW0033 to 180 ng/L in well CHP-MW0063. There were no detections of HFPO-DA (GenX).

4.4 SURFACE WATER

One surface water location (FS1-SW0001) was sampled in March 2022 as part of this SA. The results for this location are summarized in Table 4-7 and presented on Figure 4-3. The applicable

SWSLs are represented at the top of table for PFOA and PFOS. Other PFAS compounds do not have screening criteria. The laboratory report for all surface water data is included in Appendix C. The surface water results are further discussed and evaluated below.

Out of the 28 PFAS compounds analyzed, 18 compounds were detected at FS1-SW0001. PFOA and PFOS were detected in exceedance of their applicable SWSLs of 500 ng/L and 10 ng/L, respectively. Both compounds were detected at least an order of magnitude higher than the SWSL with PFOA at 1,200 ng/L and PFOS at 14,000 ng/L. The location of FS1-SW0001 is in the stormwater ditch to the southeast of the FS1 building.

4.5 FIELD QA/QC EVALUATION

The analytical results for the field blanks and equipment blanks collected during the SA are presented in Table 4-8. The analytical results for field duplicates are presented in the analytical results tables with their parent sample results. As shown in Table 4-8, there were no PFAS detected in the equipment blanks or field blanks. The field duplicate/parent pairs were evaluated and determined to be within the acceptable range for relative percent difference criteria.

Table 4-1. Site Assessment Soil Analytical Results

Location ID (FS1-)		G			SB	0001		
Date	CAS No.	Screening Criteria ^{1,2}	12/10/21	12/10/21	12/10/21	12/10/21	12/10/21	12/10/21
Sample Depth (ft bls)		Criteria	13 - 14	19 - 20	33 - 34	46 - 47	52 - 53	59 - 60
PFAS with Screening Criteria (µg/kg)							•	
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	23	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	1 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	1900	0.22 U	0.25 U	0.55 I	0.31 I	0.22 U	0.21 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	130	0.53 I	2.2	9.4	3.2	0.22 U	0.21 U
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	19	0.22 U	0.39 I	0.24 U	0.23 U	0.22 U	0.21 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	19	0.28 I	0.86 I	1.5	0.54 I	0.22 U	0.21 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	13	4.6 V	29 V	110 V	8.4 V	0.22 U	0.21 U
PFAS without Screening Criteria (μg/kg)								
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		0.55 U	0.62 U	0.61 U	0.57 U	0.55 U	0.51 U
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		0.6 U	1.5 I	4.6	0.55 U	0.6 U	0.55 U
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		2.6	4.4	2.2 I	0.57 U	0.55 U	0.51 U
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		0.55 U	0.62 U	0.61 U	0.57 U	0.55 U	0.51 U
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		0.55 U	0.62 U	0.61 U	0.57 U	0.55 U	0.51 U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		0.55 U	0.62 U	0.61 U	0.57 U	0.55 U	0.51 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		0.55 U	0.62 U	0.61 U	0.57 U	0.55 U	0.51 U
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		0.55 U	0.62 U	0.61 U	0.57 U	0.55 U	0.51 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		0.55 U	0.62 U	0.61 U	0.57 U	0.55 U	0.51 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		0.22 U	0.25 U	0.34 I	0.23 U	0.22 U	0.21 U
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		0.22 U	0.25 U	0.24 U	0.23 U	0.22 U	0.21 U
Perfluoro-n-decanoic acid (PFDA)	335-76-2		0.22 U	0.25 U	0.24 U	0.23 U	0.22 U	0.21 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		0.22 U	0.25 U	0.24 U	0.23 U	0.22 U	0.21 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		0.22 U	0.25 U	0.91 I	0.29 I	0.22 U	0.21 U
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		0.37 I	0.45 I	0.48 I	0.23 U	0.22 U	0.21 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		0.58 I	0.61 I	2.1	0.64 I	0.22 U	0.21 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		0.22 U	0.25 U	0.24 U	0.23 U	0.22 U	0.21 U
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		0.22 U	0.25 U	0.64 I	0.33 I	0.22 U	0.21 U
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		0.57 I	0.64 I	1.2	0.32 I	0.22 U	0.21 U
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		0.22 U	0.25 U	0.24 U	0.23 U	0.22 U	0.21 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		0.22 U	0.25 U	0.24 U	0.23 U	0.22 U	0.21 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		0.22 U	0.25 U	0.24 U	0.23 U	0.22 U	0.21 U
Other Parameters (mg/kg)								
Total Organic Carbon			7,400	4,200	1,200	590	1,300	1,300

1 The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

2 The Soil RSL is cited from the USEPA Regional Screening Levels and calculated with the EPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

-- = No applicable screening criteria

Bolding indicates analyte was detected

Shading indicates exceedance of screening criteria

FS1 = Fire Station #1

EPA = United States Environmental Protection Agency

ft bls = feet below land surface

PFAS = per- and polyfluoroalkyl substances

 $I = Estimated result < Limit of Quantitation and <math>\geq Detection Limit$

U = Analyte was not detected

V = Detected in the method blank

Note: A data quality review was performed by Tetra Tech's data manager and the results provided in this table were found to have been generated in conformance with good analytical practices. Some minor nonconformance issues were noted in the quality control elements associated with project samples, and the appropriate data qualification was applied to the affected results as needed. Additional details on data quality are included in the analytical reports provided in the Appendices.

³ HFPO-DA is commonly referred to as GenX

Table 4-2. Site Assessment Soil Frequencies of Detection

						Method	DoD QSM 5.3		
Parameter	CAS No.	Screening Criteria ^{1,2}	No. of Samples ³	No. of Detections	Minimum Concentration (μg/kg)	Maximum Concentration (μg/kg)	Location with Maximum Concentration	Average Concentration (Detections Only)	No. Samples > Screening Level
PFAS with Screening Criteria (μg/kg)									
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ⁴	13252-13-6	23	6	0	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	1900	6	2	0.31	0.6	FS1-SB0001-033.5-20211210	0.4	0
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	130	6	4	0.53	9.4	FS1-SB0001-033.5-20211210	4	0
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	19	6	1	0.39	0.39	FS1-SB0001-019.5-20211210	0	0
Perfluoro-n-octanoic acid (PFOA)	335-67-1	19	6	4	0.28	1.5	FS1-SB0001-033.5-20211210	1	0
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	13	6	4	4.6	110	FS1-SB0001-033.5-20211210	38	2
PFAS without Screening Criteria (μg/kg)									
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		6	0	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		6	2	1.5	4.6	FS1-SB0001-033.5-20211210	3	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	-	6	3	2.2	4.4	FS1-SB0001-019.5-20211210	3.1	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		6	0	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		6	0	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		6	0	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		6	0	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	-	6	0	NA	NA	NA	NA	NA
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		6	0	NA	NA	NA	NA	NA
Perfluoro-n-butanoic acid (PFBA)	375-22-4	-	6	1	0.34	0.34	FS1-SB0001-033.5-20211210	0.3	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	1	6	0	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	-	6	0	NA	NA	NA	NA	NA
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	-	6	0	NA	NA	NA	NA	NA
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	-	6	2	0.29	0.91	FS1-SB0001-033.5-20211210	0.6	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		6	3	0.37	0.48	FS1-SB0001-033.5-20211210	0.4	NA
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	-	6	4	0.58	2.1	FS1-SB0001-033.5-20211210	1	NA
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		6	0	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		6	2	0.33	0.64	FS1-SB0001-033.5-20211210	0.5	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	-	6	4	0.32	1.2	FS1-SB0001-033.5-20211210	0.6825	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		6	0	NA	NA	NA	NA	NA
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		6	0	NA	NA	NA	NA	NA
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		6	0	NA	NA	NA	NA	NA

All results reported in microgram per kilogram (µg/kg)

FS1 = Fire Station #1

USEPA = United States Environmental Protection Agency

NA = Not Applicable; not detected or no available screening criteria

PFAS = per- and polyfluoroalkyl substances

¹ The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

² The Soil RSL is cited from the USEPA Regional Screening Levels and calculated with the EPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

³ Only samples collected for FS1 on and after December 2021 are represented in this table. QA/QC samples are not included in the dataset.

⁴ HFPO-DA is commonly referred to as GenX

^{-- =} No applicable screening criteria

Table 4-3. Site Assessment DPT Analytical Results

Location ID (FS1-)					DP	T0001					DPT	70002		
Date	CAS No.	Screening Criteria ^{1,2}	2/14/22	2/14/22	2/14/22	2/14/22	2/14/22	2/14/22	2/14/22	2/14/22	2/14/22	2/14/22	2/14/22	2/14/22
Sample Depth (ft bls)		Criteria	3 - 7	10 - 14	15 - 19	23 - 27	33 - 37	43 - 47	4 - 8	10 - 14	15 - 19	23 - 27	33 - 37	43 - 47
PFAS with Screening Criteria (ng/L)														
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	0.88 U	1.9 I	2.8 I	5.7	3.3 I	0.98 I	220	19	1.9 I	4.3	0.94 U	1.7 I
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	2.8 I	16	21	41	24	8.9	82	5.7	4.1	4.1	0.94 U	3.8
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	0.88 U	0.9 U	0.89 U	0.93 U	0.9 U	0.89 U	0.94 U	0.95 U	0.87 U	0.91 U	0.94 U	0.95 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	2.9 I	21	28	5	12	4.4	7.2	2.1 I	2 I	0.91 U	0.94 U	0.95 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	13	9.6	0.89 U	0.93 U	10	0.89 U	2.2 I	0.95 U	0.87 U	0.91 U	0.94 U	0.95 U
PFAS without Screening Criteria (ng/L)														
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		1.8 U	1.8 U	1.8 U	1.9 U	14	1.8 U	1.9 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.7 U	1.8 U	1.9 U	1.9 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		5	9.8	9.1	3.7	11	4.1	200	43	2.9 I	0.91 U	0.94 U	2.6 I
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		0.88 U	0.9 U	0.89 U	0.93 U	0.9 U	0.89 U	0.94 U	0.95 U	0.87 U	0.91 U	0.94 U	0.95 U
Perfluoro-n-decanoic acid (PFDA)	335-76-2		0.88 U	0.9 U	0.89 U	0.93 U	0.9 U	0.89 U	0.94 U	0.95 U	0.87 U	0.91 U	0.94 U	0.95 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		0.88 U	0.9 U	0.89 U	0.93 U	0.9 U	0.89 U	0.94 U	0.95 U	0.87 U	0.91 U	0.94 U	0.95 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		0.88 U	3 I	1.3 I	0.93 U	1.1 I	0.89 U	0.94 U	0.95 U	0.87 U	0.91 U	0.94 U	0.95 U
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		0.88 U	3.5 I	5.3	4.5	5.1	2.6 I	7.4	1.5 I	1 I	1.9 I	0.94 U	0.95 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		1.4 I	3.8	5.5	7.7	9.9	4.8	61	6.8	1.4 I	3.4 I	0.94 U	0.95 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		0.88 U	0.9 U	0.89 U	0.93 U	0.9 U	0.89 U	0.94 U	0.95 U	0.87 U	0.91 U	0.94 U	0.95 U
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		0.88 U	1.8 I	1.8 I	6.6	3 I	1.8 I	110	4.4	2.1 I	4.5	0.94 U	1.4 I
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		0.88 U	4.4	5.9	6.6	11	5.2	150	16	1.5 I	0.91 U	0.94 U	1.3 I
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		0.88 U	0.9 U	0.89 U	0.93 U	0.9 U	0.89 U	0.94 U	0.95 U	0.87 U	0.91 U	0.94 U	0.95 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		0.88 U	0.9 U	0.89 U	0.93 U	0.9 U	0.89 U	0.94 U	0.95 U	0.87 U	0.91 U	0.94 U	0.95 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		0.88 U	0.9 U	0.89 U	0.93 U	0.9 U	0.89 U	0.94 U	0.95 U	0.87 U	0.91 U	0.94 U	0.95 U

Table 4-3. Site Assessment DPT Analytical Results (Continued)

Location ID (FS1-)		C	·		·	DPT0003			·			·	DPT0004		·	
Date	CAS No.	Screening Criteria ^{1,2}	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22
Sample Depth (ft bls)		Criteria	3 - 7	10 - 14	15 - 19	15 - 19*	23 - 27	33 - 37	43 - 47	3 - 7	10 - 14	10 - 14*	15 - 17	23 - 27	33 - 37	43 - 47
PFAS with Screening Criteria (ng/L)																
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 U	20 U	20 U	1.8 U	1.8 U	1.8 U	1.9 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	0.88 U	0.92 U	0.92 U	1.3 I	1.4 I	1.4 I	0.91 U	10 U	10 U	10 U	2.3 I	6.8	7.4	0.93 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	3.6	7.9	3.1 I	3.3 I	5	4.8	0.91 U	17 I	28 I	28 I	24	34	34	2.7 I
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	0.92 U	0.91 U	10 U	10 U	10 U	0.88 U	0.9 U	0.92 U	0.93 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	0.88 U	0.92 U	0.92 U	0.99 I	2.1 I	1.1 I	0.91 U	10 U	10 U	10 U	20	5.1	6.4	0.93 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	4.4	2.9 I	5.3	4.8	1.9 I	5	0.91 U	28 I	10 U	10 U	2.2 I	0.9 U	0.92 U	0.93 U
PFAS without Screening Criteria (ng/L)																
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 U	20 U	20 U	1.8 U	1.8 U	1.8 U	1.9 U
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 U	20 U	20 U	3.7 I	1.8 U	1.8 U	1.9 U
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 U	20 U	20 U	1.8 U	1.8 U	1.8 U	1.9 U
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 U	20 U	20 U	1.8 U	1.8 U	1.8 U	1.9 U
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 U	20 U	20 U	1.8 U	1.8 U	1.8 U	1.9 U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 U	20 U	20 U	1.8 U	1.8 U	1.8 U	1.9 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 U	20 U	20 U	1.8 U	1.8 U	1.8 U	1.9 U
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 U	20 U	20 U	1.8 U	1.8 U	1.8 U	1.9 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 U	20 U	20 U	1.8 U	1.8 U	1.8 U	1.9 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		7.4	8.6	15	15	21	51	0.91 U	10 U	11 I	10 I	10	6.4	7.5	0.99 I
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	0.92 U	0.91 U	10 U	10 U	10 U	0.88 U	0.9 U	0.92 U	0.93 U
Perfluoro-n-decanoic acid (PFDA)	335-76-2		0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	0.92 U	0.91 U	10 U	10 U	10 U	0.88 U	0.9 U	0.92 U	0.93 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	0.92 U	0.91 U	10 U	10 U	10 U	0.88 U	0.9 U	0.92 U	0.93 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	0.92 U	0.91 U	10 U	10 U	10 U	0.88 U	0.9 U	0.92 U	0.93 U
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	1.1 I	0.91 U	10 U	10 U	10 U	6.4	5.8	6.5	0.93 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		0.88 U	0.92 U	0.98 I	0.92 U	0.91 U	2.7 I	0.91 U	10 U	13 I	11 I	6.6	11	12	1.3 I
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	0.92 U	0.91 U	10 U	10 U	10 U	0.88 U	0.9 U	0.92 U	0.93 U
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	0.92 U	0.91 U	10 U	10 U	10 U	2 I	6.1	6.1	0.93 U
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		0.88 U	0.92 U	1.1 I	1.2 I	1.3 I	3.3 I	0.91 U	10 U	15 I	13 I	7.2	10	11	0.93 U
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	0.92 U	0.91 U	10 U	10 U	10 U	0.88 U	0.9 U	0.92 U	0.93 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	0.92 U	0.91 U	10 U	10 U	10 U	0.88 U	0.9 U	0.92 U	0.93 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		0.88 U	0.92 U	0.92 U	0.92 U	0.91 U	0.92 U	0.91 U	10 U	10 U	10 U	0.88 U	0.9 U	0.92 U	0.93 U

Table 4-3. Site Assessment DPT Analytical Results (Continued)

Location ID (FS1-		g .				DPT0005						DPT	70006		
Date	CAS No.	Screening Criteria ^{1,2}	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/16/22	2/16/22	2/16/22	2/16/22	2/16/22	2/16/22
Sample Depth (ft bls	,	Criteria	3 - 7	10 - 14	15 - 19	23 - 27	33 - 37	33 - 37*	43 - 47	3 - 7	10 - 14	15 - 19	23 - 27	33 - 37	43 - 47
PFAS with Screening Criteria (ng/L)															
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	20 U	20 U	20 U	1.8 U	1.7 U	1.8 U	1.8 U	3.4 U	1.8 U	1.8 U	1.7 U	18 U	1.8 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	10 U	10 U	10 U	1.9 I	0.87 U	0.89 U	0.92 U	5.8 I	2700	7000	2100	550	0.9 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	10 U	10 U	10 U	12	0.87 U	0.89 U	0.92 U	360	27000	100000	18000	3800	3.9
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	10 U	10 U	10 U	0.9 U	0.87 U	0.89 U	0.92 U	110	490	96	0.87 U	9.1 U	0.9 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	10 U	10 U	10 U	5.9	0.87 U	0.89 U	0.92 U	110	6200	12000	830	690	0.9 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	10 U	10 U	10 U	0.9 U	0.87 U	0.89 U	0.92 U	1800	27000	25000	49	99	6.8
PFAS without Screening Criteria (ng/L)															
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		20 U	20 U	20 U	1.8 U	1.7 U	1.8 U	1.8 U	3.4 U	88	3800	3100	18 U	1.8 U
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		20 U	20 U	20 U	1.8 U	1.7 U	1.8 U	1.8 U	6.2 I	20000	95000	22000	160	2.6 I
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		20 U	20 U	20 U	1.8 U	1.7 U	1.8 U	1.8 U	3.4 U	1.8 U	1.8 U	1.7 U	18 U	1.8 U
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		20 U	20 U	20 U	1.8 U	1.7 U	1.8 U	1.8 U	3.4 U	1.8 U	1.8 U	1.7 U	18 U	1.8 U
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		20 U	20 U	20 U	1.8 U	1.7 U	1.8 U	1.8 U	3.4 U	1.8 U	1.8 U	1.7 U	18 U	1.8 U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		20 U	20 U	20 U	1.8 U	1.7 U	1.8 U	1.8 U	3.4 U	1.8 U	1.8 U	1.7 U	18 U	1.8 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		20 U	20 U	20 U	1.8 U	1.7 U	1.8 U	1.8 U	3.4 U	1.8 U	1.8 U	1.7 U	18 U	1.8 U
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		20 U	20 U	20 U	1.8 U	1.7 U	1.8 U	1.8 U	3.4 U	1.8 U	1.8 U	1.7 U	18 U	1.8 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		20 U	20 U	20 U	1.8 U	1.7 U	1.8 U	1.8 U	3.4 U	1.8 U	1.8 U	1.7 U	18 U	1.8 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		10 I	10 U	10 U	11	0.87 U	0.89 U	0.92 U	76	1000	4200	2300	110	0.9 U
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		10 U	10 U	10 U	0.9 U	0.87 U	0.89 U	0.92 U	1.7 U	0.9 U	0.9 U	0.87 U	9.1 U	0.9 U
Perfluoro-n-decanoic acid (PFDA)	335-76-2		10 U	10 U	10 U	0.9 U	0.87 U	0.89 U	0.92 U	6.2 I	0.9 U	0.9 U	0.87 U	9.1 U	0.9 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		10 U	10 U	10 U	0.9 U	0.87 U	0.89 U	0.92 U	1.7 U	0.9 U	0.9 U	0.87 U	9.1 U	0.9 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		10 U	10 U	10 U	0.9 U	0.87 U	0.89 U	0.92 U	31	4400	2000	42	28 I	0.9 U
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		10 U	10 U	10 U	10	0.87 U	0.89 U	0.92 U	110	1700	10000	2300	180	0.9 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		10 U	10 U	10 U	21	0.87 U	0.89 U	0.92 U	110	4100	21000	9300	810	0.9 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		10 U	10 U	10 U	0.9 U	0.87 U	0.89 U	0.92 U	1.8 I	0.9 U	0.9 U	0.87 U	9.1 U	0.9 U
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		10 U	10 U	10 U	2.2 I	0.87 U	0.89 U	0.92 U	11	3300	9000	2400	490	0.9 U
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		10 U	10 U	10 U	32	0.87 U	0.89 U	0.92 U	130	3100	15000	9100	230	0.9 U
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		10 U	10 U	10 U	0.9 U	0.87 U	0.89 U	0.92 U	1.7 U	0.9 U	0.9 U	0.87 U	9.1 U	0.9 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		10 U	10 U	10 U	0.9 U	0.87 U	0.89 U	0.92 U	1.7 U	0.9 U	0.9 U	0.87 U	9.1 U	0.9 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		10 U	10 U	10 U	0.9 U	0.87 U	0.89 U	0.92 U	1.7 U	0.9 U	0.9 U	0.87 U	9.1 U	0.9 U

Table 4-3. Site Assessment DPT Analytical Results (Continued)

Location ID (FS1-)						DPT0007						DPT	0008		
Date	CAS No.	Screening	2/16/22	2/16/22	2/16/22	2/16/22	2/16/22	2/16/22	2/16/22	2/16/22	2/16/22	2/16/22	2/16/22	2/17/22	2/17/22
Sample Depth (ft bls)		Criteria ^{1,2}	3 - 7	10 - 14	15 - 19	23 - 27	23 - 27*	33 - 37	43 - 47	3 - 7	10 - 14	15 - 19	23 - 27	33 - 37	43 - 47
PFAS with Screening Criteria (ng/L)															
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	20 U	20 U	20 U	1.7 U	2.1 U	1.8 U	1.8 U	20 U	20 U	20 U	1.9 U	1.8 U	1.7 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	10 U	14 I	19 I	76	86	4300	2.4 I	10 U	10 U	10 U	19	5.2	0.87 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	48	79	100	29	36	15000	12	13 I	13 I	57	490	8.8	0.87 U
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	10 U	10 U	10 U	0.86 U	1 U	0.91 U	0.89 U	10 U	10 U	10 U	0.93 U	0.9 U	0.87 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	10 U	10 U	10 U	0.86 U	1 U	510	28	10 U	10 U	10 U	130	2.6 I	0.87 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	47	10 U	10 U	1.5 I	1 U	94	7.6	10 U	18 I	10 U	1.2 I	0.9 U	0.87 U
PFAS without Screening Criteria (ng/L)															
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		20 U	20 U	20 U	1.7 U	2.1 U	530 I	1.8 U	20 U	20 U	20 U	1.9 U	1.8 U	1.7 U
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		20 U	20 U	20 U	1.7 U	1.8 U	7500	1.9 I	20 U	20 U	20 U	10	1.8 U	1.7 U
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		20 U	20 U	20 U	1.7 U	2.1 U	1.8 U	1.8 U	20 U	20 U	20 U	1.9 U	1.8 U	1.7 U
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		20 U	20 U	20 U	1.7 U	2.1 U	1.8 U	1.8 U	20 U	20 U	20 U	1.9 U	1.8 U	1.7 U
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		20 U	20 U	20 U	1.7 U	2.1 U	1.8 U	1.8 U	20 U	20 U	20 U	1.9 U	1.8 U	1.7 U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		20 U	20 U	20 U	1.7 U	2.1 U	1.8 U	1.8 U	20 U	20 U	20 U	1.9 U	1.8 U	1.7 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		20 U	20 U	20 U	1.7 U	2.1 U	1.8 U	1.8 U	20 U	20 U	20 U	1.9 U	1.8 U	1.7 U
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		20 U	20 U	20 U	1.7 U	2.1 U	1.8 U	1.8 U	20 U	20 U	20 U	1.9 U	1.8 U	1.7 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		20 U	20 U	20 U	1.7 U	2.1 U	1.8 U	1.8 U	20 U	20 U	20 U	1.9 U	1.8 U	1.7 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		10 U	10 U	10 U	4.1	3.8 I	830	1.1 I	17 I	10 U	11 I	11	1.8 I	0.87 U
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		10 U	10 U	10 U	0.86 U	1 U	0.91 U	0.89 U	10 U	10 U	10 U	0.93 U	0.9 U	0.87 U
Perfluoro-n-decanoic acid (PFDA)	335-76-2		10 U	10 U	10 U	0.86 U	1 U	0.91 U	0.89 U	10 U	10 U	10 U	0.93 U	0.9 U	0.87 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		10 U	10 U	10 U	0.86 U	1 U	0.91 U	0.89 U	10 U	10 U	10 U	0.93 U	0.9 U	0.87 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		10 U	10 U	10 U	0.86 U	1 U	240	0.89 I	10 U	10 U	10 U	1.5 I	0.9 U	0.87 U
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		10 U	10 U	10 U	2 I	2 I	650	1.9 I	10 U	10 U	10 U	11	1 I	0.87 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		10 I	10 U	10 U	10	11	4600	4.1	10 U	10 U	10 U	41	9.8	0.87 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		10 U	10 U	10 U	0.86 U	1 U	0.91 U	0.89 U	10 U	10 U	10 U	0.93 U	0.9 U	0.87 U
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		10 U	17 I	21 I	43	48	3300	2.8 I	10 U	10 U	10 U	25	4.9	0.87 U
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		10 U	10 U	10 U	6.2	6.8	1900	1.6 I	10 U	10 U	10 U	25	0.9 U	0.87 U
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		10 U	10 U	10 U	0.86 U	1 U	0.91 U	0.89 U	10 U	10 U	10 U	0.93 U	0.9 U	0.87 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		10 U	10 U	10 U	0.86 U	1 U	0.91 U	0.89 U	10 U	10 U	10 U	0.93 U	0.9 U	0.87 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		10 U	10 U	10 U	0.86 U	1 U	0.91 U	0.89 U	10 U	10 U	10 U	0.93 U	0.9 U	0.87 U

1 The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

2 The Groundwater RSL is cited from the USEPA Regional Screening Levels and calculated with the USEPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

3 HFPO-DA is commonly referred to as GenX

* Duplicate sample results are included in this table and labeled with asterisk; other Quality Control/Quality Assurance sample results are included in the laboratory reports (Appendix C) and Table 4-8

-- = No applicable screening criteria

Bolding indicates analyte was detected

Shading indicates exceedance of screening criteria

FS1 = Fire Station #1

USEPA = United States Environmental Protection Agency

ft bls = feet below land surface

PFAS = per- and polyfluoroalkyl substances

 $I = Estimated \ result \leq Limit \ of \ Quantitation \ and \geq Detection \ Limit$

U = Analyte was not detected

Note: A data quality review was performed by Tetra Tech's data manager and the results provided in this table were found to have been generated in conformance with good analytical practices. Some minor nonconformance issues were noted in the quality control elements associated with project samples, and the appropriate data qualification was applied to the affected results as needed. Additional details on data quality are included in the analytical reports provided in the Appendices.

Table 4-4. Site Assessment DPT Groundwater Frequencies of Detection

						Metho	d DoD QSM 5.3		
Parameter	CAS No.	Screening Criteria ^{1,2}	No. of Samples ³	No. of Detections	Minimum Concentration (ng/L)	Maximum Concentration (ng/L)	Location with Maximum Concentration	Average Concentration (Detections Only)	No. Samples > Screening Level
PFAS with Screening Criteria (ng/L)									
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ⁴	13252-13-6	6	48	0	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	48	28	0.98	7000	FS1-DPT0006-017.0-20220216	609.8	4
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	48	40	2.7	100000	FS1-DPT0006-017.0-20220216	4135	13
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	48	3	96	490	FS1-DPT0006-012.0-20220216	232	3
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	48	24	1.1	12000	FS1-DPT0006-017.0-20220216	859	14
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	48	23	1.2	27000	FS1-DPT0006-012.0-20220216	2357	17
PFAS without Screening Criteria (ng/L)									
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		48	4	88	3800	FS1-DPT0006-017.0-20220216	1879.5	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		48	11	1.9	95000	FS1-DPT0006-017.0-20220216	13154	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		48	0	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		48	0	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		48	0	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		48	0	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		48	0	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		48	0	NA	NA	NA	NA	NA
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		48	0	NA	NA	NA	NA	NA
Perfluoro-n-butanoic acid (PFBA)	375-22-4		48	34	0.99	4200	FS1-DPT0006-017.0-20220216	265.1	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		48	0	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2		48	1	6.2	6.2	FS1-DPT0006-005.0-20220216	6.2	NA
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		48	0	NA	NA	NA	NA	NA
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		48	11	0.89	4400	FS1-DPT0006-012.0-20220216	613.5	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		48	24	1	10000	FS1-DPT0006-017.0-20220216	625.8	NA
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		48	29	0.98	21000	FS1-DPT0006-017.0-20220216	1385	NA
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		48	1	1.8	1.8	FS1-DPT0006-005.0-20220216	1.8	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		48	26	1.4	9000	FS1-DPT0006-017.0-20220216	721.9	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		48	26	1.1	15000	FS1-DPT0006-017.0-20220216	1145.2	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		48	0	NA	NA	NA	NA	NA
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		48	0	NA	NA	NA	NA	NA
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		48	0	NA	NA	NA	NA	NA

FS1 = Fire Station #1

USEPA = United States Environmental Protection Agency

NA = Not Applicable; not detected or no available screening criteria

PFAS = per- and polyfluoroalkyl substances

¹ The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

² The Groundwater RSL is cited from the USEPA Regional Screening Levels and calculated with the USEPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

³ Only samples collected for FS1 on and after December 2021 are represented in this table. QA/QC samples are not included in the dataset.

⁴ HFPO-DA is commonly referred to as GenX

^{-- =} No applicable screening criteria

Table 4-5. Site Assessment Monitoring Well Analytical Results

Location ID	CAS No.	Screening					CHP-MW0033			
Date	CHS IVO.	Criteria ^{1,2}	10/29/21	10/29/21	10/29/21	10/28/21	10/28/21	10/28/21	10/28/21	10/29/21
Screen Interval (ft bls)			2.5 - 12.5	40 - 45	40 - 45	42.5 - 47.5	32.5 - 37.5	22.5 - 27.5	3 - 13	40 - 50
PFAS with Screening Criteria (ng/L)										
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	1.9 U	1.8 U	2.0 U	1.7 U	1.8 U	1.8 U	1.7 U	1.9 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	0.94 U	6.1	4.9	3.5	2.7 I	2.7 I	4.1	8.6
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	1.3 I	31	29	22	20	16	22	90
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	0.94 U	0.90 U	0.98 U	0.87 U	0.88 U	0.90 U	0.86 U	1.4 I
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	0.94 U	9.2	7.8	4.6	5.0	3.9	2.3 I	16
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	19	6.9	8.7	4.8	4.7	3.6	6.5	180
PFAS without Screening Criteria (ng/L)										
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		1.9 U	1.8 U	2.0 U	1.7 U	1.8 U	1.8 U	1.7 U	1.9 U
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		1.9 U	2.5 I	6.0 I	1.7 U	1.8 U	1.8 U	7.7	1.9 U
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		1.9 U	1.8 U	2.0 U	1.7 U	1.8 U	1.8 U	1.7 U	1.9 U
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		1.9 U	1.8 U	2.0 U	1.7 U	1.8 U	1.8 U	1.7 U	1.9 U
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		1.9 U	1.8 U	2.0 U	1.7 U	1.8 U	1.8 U	1.7 U	1.9 U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		1.9 U	1.8 U	2.0 U	1.7 U	1.8 U	1.8 U	1.7 U	1.9 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		1.9 U	1.8 U	2.0 U	1.7 U	1.8 U	1.8 U	1.7 U	1.9 U
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		1.9 U	1.8 U	2.0 U	1.7 U	1.8 U	1.8 U	1.7 U	1.9 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		1.9 U	1.8 U	2.0 U	1.7 U	1.8 U	1.8 U	1.7 U	1.9 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		1.9 I	14	11	4.8	4.4	3.7	6.9	4.7
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		0.94 U	0.90 U	0.98 U	0.87 U	0.88 U	0.90 U	0.86 U	0.94 U
Perfluoro-n-decanoic acid (PFDA)	335-76-2		0.94 U	0.90 U	0.98 U	0.87 U	0.88 U	0.90 U	0.86 U	0.94 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		0.94 U	0.90 U	0.98 U	0.87 U	0.88 U	0.90 U	0.86 U	0.94 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		0.94 U	0.90 U	0.98 U	0.87 U	0.88 U	0.90 U	0.86 U	5.5
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		0.94 U	5.4	5.0	2.2 I	1.8 I	1.5 I	1.8 I	4.7
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		0.94 U	14	11	3.2 I	0.88 U	2.9 I	46	11
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		0.94 U	0.9 U	0.98 U	0.87 U	0.88 U	0.9 U	0.86 U	0.94 U
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		0.94 U	5.1	5.1	2.3 I	2.6 I	1.9 I	2.8 I	9.3
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		1.1 I	13	12	4.0	4.2	3.8	4.3	5.0
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		0.94 U	0.90 U	0.98 U	0.87 U	0.88 U	0.90 U	0.86 U	0.94 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		0.94 U	0.90 U	0.98 U	0.87 U	0.88 U	0.90 U	0.86 U	0.94 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		0.94 U	0.90 U	0.98 U	0.87 U	0.88 U	0.90 U	0.86 U	0.94 U

1 The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

-- = No applicable screening criteria

Bolding indicates analyte was detected

Shading indicates exceedance of screening criteria

FS1 = Fire Station #1

USEPA = United States Environmental Protection Agency

ft bls = feet below land surface

NA = Not Applicable; compound not analyzed

PFAS = per- and polyfluoroalkyl substances

 $I = \ Estimated \ result < Limit \ of \ Quantitation \ and \\ \ge Detection \ Limit$

U = Analyte was not detected

Note: A data quality review was performed by Tetra Tech's data manager and the results provided in this table were found to have been generated in conformance with good analytical practices. Some minor nonconformance issues were noted in the quality control elements associated with project samples, and the appropriate data qualification was applied to the affected results as needed. Additional details on data quality are included in the analytical reports provided in the Appendices.

² The Groundwater RSL is cited from the USEPA Regional Screening Levels and calculated with the USEPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

³ HFPO-DA is commonly referred to as GenX

Table 4-6. Site Assessment Monitoring Well Groundwater Frequencies of Detection

						Metho	d DoD QSM 5.3		
Parameter	CAS No.	Screening Criteria ^{1,2}	No. of Samples	No. of Detections	Minimum Concentration (ng/L)	Maximum Concentration (ng/L)	Location with Maximum Concentration	Average Concentration (Detections Only)	No. Samples > Screening Level
PFAS with Screening Criteria (ng/L)									
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	8	0	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	8	7	2.7	8.6	CHP-MW0063-045.0-20211029	4.3	0
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	8	8	1.3	90	CHP-MW0063-045.0-20211029	15.1	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	8	1	1.4	1	CHP-MW0063-045.0-20211029	1.4	0
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	8	7	2.3	16	CHP-MW0063-045.0-20211029	7.0	3
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	8	8	3.6	180	CHP-MW0063-045.0-20211029	29.3	7
PFAS without Screening Criteria (ng/L)									
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		8	0	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	-	8	3	2.5	7.7	CHP-MW0035-008.5-10282021	5.4	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	-	8	0	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		8	0	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		8	0	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		8	0	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		8	0	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		8	0	NA	NA	NA	NA	NA
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		8	0	NA	NA	NA	NA	NA
Perfluoro-n-butanoic acid (PFBA)	375-22-4		8	8	1.9	14	CHP-MW0028-042.5-20211029	6.4	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		8	0	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2	-	8	0	NA	NA	NA	NA	NA
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	-	8	0	NA	NA	NA	NA	NA
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	-	8	1	5.5	5.5	CHP-MW0063-045.0-20211029	5.5	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		8	7	1.5	5.4	CHP-MW0028-042.5-20211029	2.95	NA
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		8	6	2.9	46	CHP-MW0035-008.5-10282021	12.6	NA
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		8	0	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		8	7	1.9	9.3	CHP-MW0063-045.0-20211029	4.2	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		8	8	1.1	13	CHP-MW0028-042.5-20211029	5.9	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		8	0	NA	NA	NA	NA	NA
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		8	0	NA	NA	NA	NA	NA
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	-	8	0	NA	NA	NA	NA	NA

FS1 = Fire Station #1

USEPA = United States Environmental Protection Agency

NA = Not Applicable; not detected or no available screening criteria

PFAS = per- and polyfluoroalkyl substances

¹ The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table

² The Groundwater RSL is cited from the USEPA Regional Screening Levels and calculated with the USEPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

³ HFPO-DA is commonly referred to as GenX

^{-- =} No applicable screening criteria

Table 4-7. Site Assessment Surface Water Analytical Results

Location ID (FS1-)		G	SW0001
Date	CAS	Screening Criteria ¹	3/10/2022
Sample Depth (ft bls)		Criteria	0 - 0.5
PFAS with Screening Criteria (ng/L)			
Perfluoro-n-octanoic acid (PFOA)	335-67-1	500	1200
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	10	14000
PFAS without Screening Criteria (ng/L)			
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		1.8 UQ
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		2700
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		470
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		1.8 UQ
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		1.8 UQ
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		1.8 U
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ²	13252-13-6		1.8 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		1.8 U
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		1.8 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		50
Perfluoro-n-butanoic acid (PFBA)	375-22-4		270 Q
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5		79
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		3.9 Q
Perfluoro-n-decanoic acid (PFDA)	335-76-2		18
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		0.92 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		130
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		480
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		1000
Perfluorohexanesulfonic acid (PFHxS)	355-46-4		3300
Perfluoro-n-nonanoic acid (PFNA)	375-95-1		110
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		23 Q
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		140
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		1000
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		0.92 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		0.92 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		2.1 I

1 The State of Florida human health Surface Water Screening Levels for PFOA and PFOS are presented in this table

2 HFPO-DA is commonly referred to as GenX

-- = No applicable screening criteria

Bolding indicates analyte was detected

Shading indicates exceedance of screening criteria

FS1 = Fire Station #1

ft bls = feet below land surface

PFAS = per- and polyfluoroalkyl substances

I = Estimated result < Limit of Quantitation and ≥ Detection Limit

U = Analyte was not detected

Q = Out of holding time

Note: A data quality review was performed by Tetra Tech's data manager and the results provided in this table were found to have been generated in conformance with good analytical practices. Some minor nonconformance issues were noted in the quality control elements associated with project samples, and the appropriate data qualification was applied to the affected results as needed. Additional details on data quality are included in the analytical reports provided in the Appendices.

Table 4-8. Site Assessment Field QA/QC Analytical Results

Sample ID (FS1-)		Screening	FS1-FB03- 20211210	FS1-RB03- 20211210	FS1-EB- 20220215-01	FS1-EB- 20220215-02	FS1-EB- 20220215-03	FS1-FB- 20220215-01	FS1-FB- 20220215-02	FS1-EB- 20220216-01	FS1-FB- 20220217-01
Date	CAS No.	Criteria ^{1,2}	12/10/21	12/10/21	2/15/22	2/15/22	2/15/22	2/15/22	2/15/22	2/16/22	2/17/22
Sample Depth (ft bls)		Criteria	-	-	-	-	-	-	-	-	-
Туре			FB	EB	EB	EB	EB	FB	FB	EB	FB
PFAS with Screening Criteria (ng/L)											
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	2.0 U	1.8 U	2.2 U	2.0 U	2.1 U	2.1 U	2.0 U	1.8 U	2.0 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
PFAS without Screening Criteria (ng/L)											
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		2.0 U	1.8 U	2.2 U	2.0 U	2.1 U	2.1 U	2.0 U	1.8 U	2.0 U
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		2.0 U	1.8 U	2.2 U	2.0 U	2.1 U	2.1 U	2.0 U	1.8 U	2.0 U
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		2.0 U	1.8 U	2.2 U	2.0 U	2.1 U	2.1 U	2.0 U	1.8 U	2.0 U
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		2.0 U	1.8 U	2.2 U	2.0 U	2.1 U	2.1 U	2.0 U	1.8 U	2.0 U
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		2.0 U	1.8 U	2.2 U	2.0 U	2.1 U	2.1 U	2.0 U	1.8 U	2.0 U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		2.0 U	1.8 U	2.2 U	2.0 U	2.1 U	2.1 U	2.0 U	1.8 U	2.0 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		2.0 U	1.8 U	2.2 U	2.0 U	2.1 U	2.1 U	2.0 U	1.8 U	2.0 U
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		2.0 U	1.8 U	2.2 U	2.0 U	2.1 U	2.1 U	2.0 U	1.8 U	2.0 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		2.0 U	1.8 U	2.2 U	2.0 U	2.1 U	2.1 U	2.0 U	1.8 U	2.0 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-n-decanoic acid (PFDA)	335-76-2		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		0.98 U	0.91 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	0.90 U	1.0 U

¹ The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

² The Groundwater RSL is cited from the USEPA Regional Screening Levels and calculated with the USEPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

³ HFPO-DA is commonly referred to as GenX

^{-- =} No applicable screening criteria

EB = Equipment Blank

FB = Field Blank

FS1 = Fire Station #1

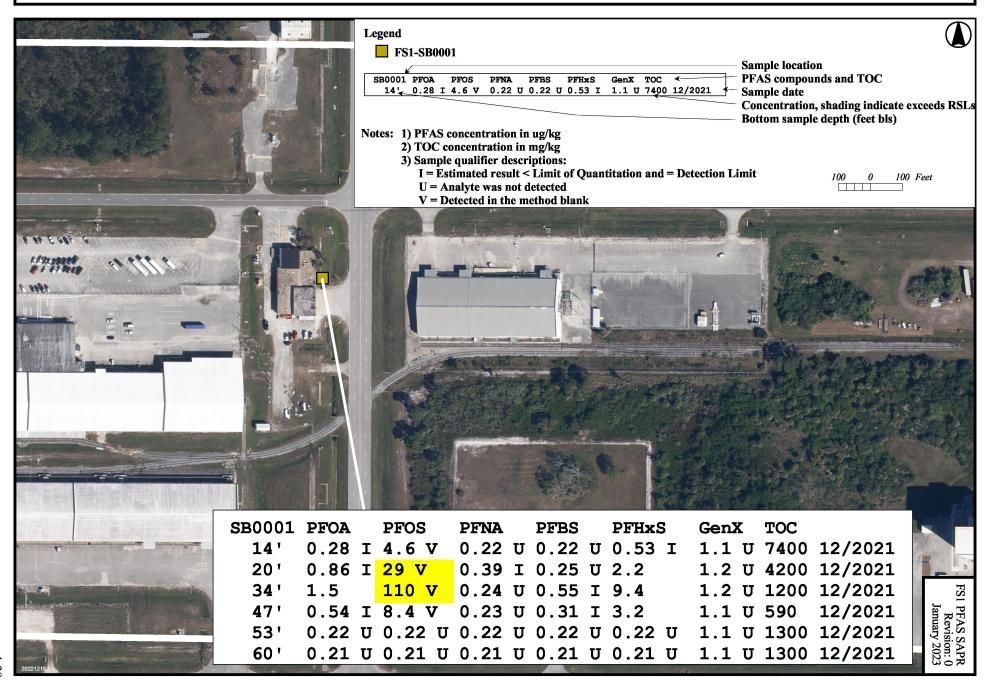
USEPA = United States Environmental Protection Agency

ft bls = feet below land surface

PFAS = per- and polyfluoroalkyl substances

U = Analyte was not detected

FIGURE 4-1 PFAS SOIL RESULTS SWMU 116, KENNEDY SPACE CENTER, FLORIDA



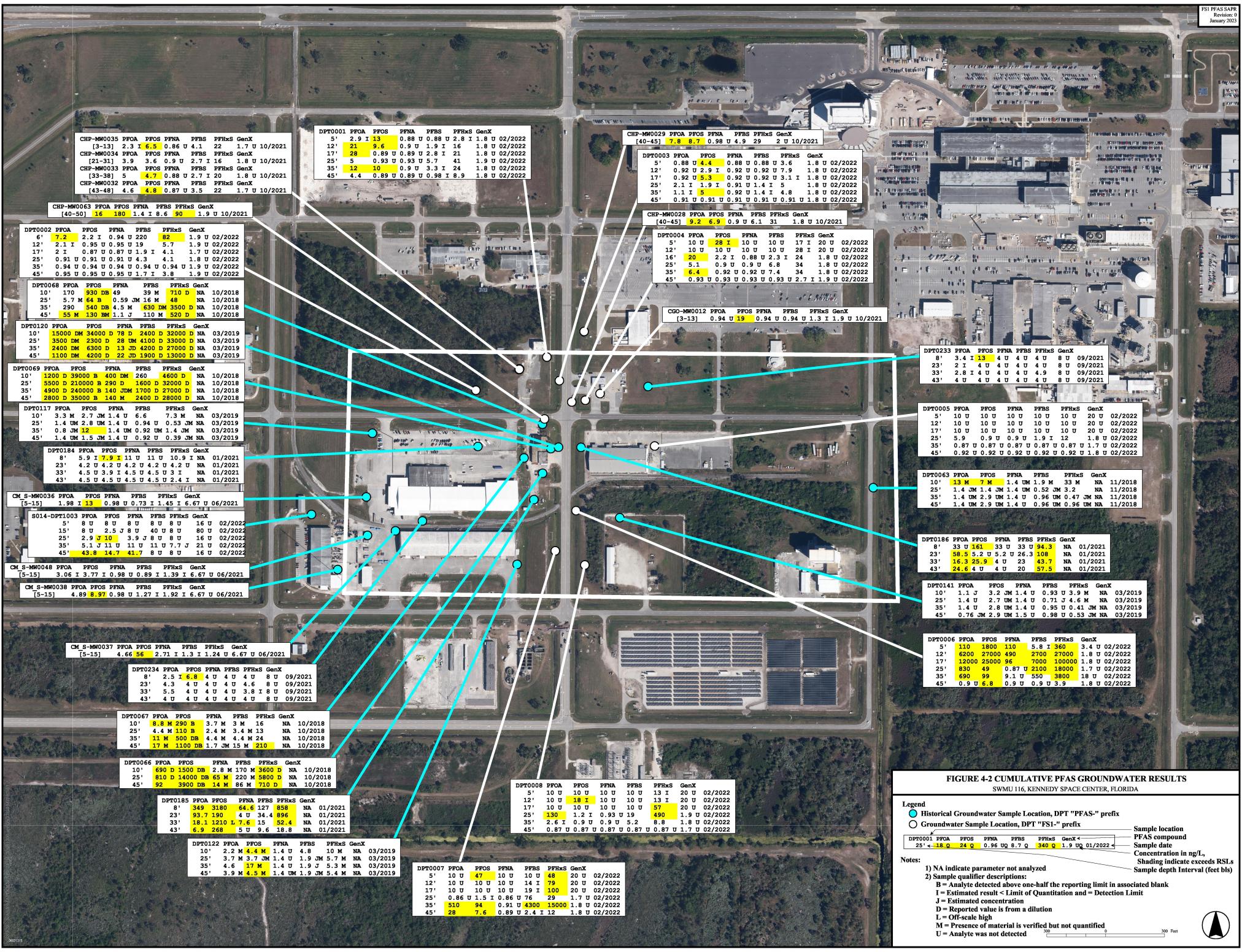
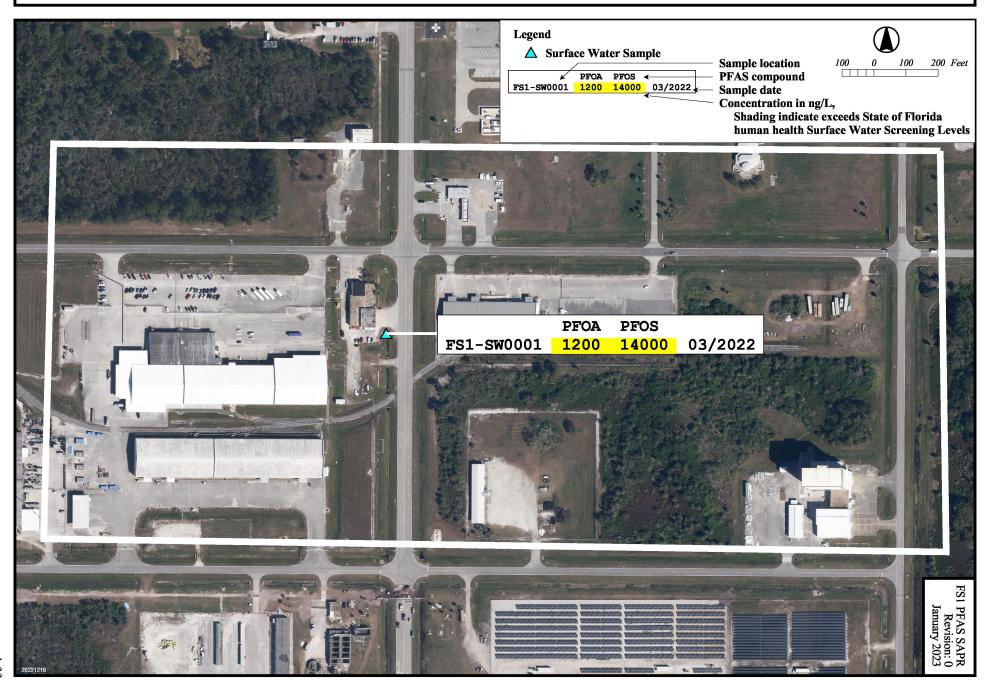


FIGURE 4-3 SITE ASSESSMENT PFAS SURFACE WATER RESULTS SWMU 116, KENNEDY SPACE CENTER, FLORIDA



SECTION V

CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

PFAS SA activities were conducted between October 2021 and March 2022 to collect additional data to supplement the existing dataset and better understand the extent of PFAS impacts to the environment in the FS1 Area. Sampling included completion of one continuous soil core to 70 ft bls to evaluate lithology, collection of six soil samples from the soil core for analysis of PFAS and TOC, collection of 48 groundwater DPT samples from eight DPT locations up to depths of 47 ft bls, collection of groundwater from eight monitoring wells, and collection of one surface water sample for PFAS analysis. Soil and groundwater results were screened against the most recent (May 2022) USEPA RSLs and surface water results were screened against the Florida SWSLs. In addition, historical PFAS analytical results collected at FS1 were re-screened against the most up-to-date screening levels and evaluated along with the recently collected results to gain an overall understanding of the PFAS distribution at the site.

Re-screening of historical analytical results from samples collected between 2018 and 2022 identified groundwater and soil with screening level exceedances. Results from the SA showed exceedances of the applicable screening criteria for groundwater, soil, and surface water. Of the 48 DPT groundwater samples collected over eight locations, 15 PFAS compounds were detected with five compounds (PFBS, PFHxS, PFNA, PFOA, and PFOS) exceeding RSLs. The maximum concentration for all five compounds was from the FS1-DPT0006 location. The PFBS maximum concentration was 7,000 ng/L in the 15-19 ft bls interval, which is greater than the RSL of 600 ng/L. The PFHxS maximum concentration was 100,000 ng/L in the 15-19 ft bls depth interval, which is greater than the RSL of 39 ng/L. The PFNA maximum concentration was 490 ng/L in the 10-14 ft bls depth interval, which is greater than the RSL of 6 ng/L. The PFOS maximum concentration was 27,000 ng/L in the 10-14 ft bls interval, which is greater than the RSL of 6 ng/L. The PFOS maximum concentration was 27,000 ng/L in the 10-14 ft bls interval, which is greater than the RSL of 4 ng/L. The PFAS concentrations in DPT groundwater samples generally decreased with depth.

PFAS concentrations in the monitoring wells located in the northern portion of the FS1 Area generally had lower detections than the DPT samples and only had exceedances of PFHxS, PFOA, and PFOS. The well with the maximum concentrations was CHP-MW0063, with exceedances of PFHxS (90 ng/L), PFOA (16 ng/L), and PFOS (180 ng/L) greater than RSLs. Of the 6 soil samples collected at one continuous boring location, PFOS exceeded the RSL in two of the depth intervals (19-20 ft bls and 33-34 ft bls), but it should be noted that these samples were collected in the saturated zone. In the surface water sample, PFOA and PFOS were detected at concentrations greater than the SWSLs with PFOA at 1,200 ng/L, greater than the SWSL of 500 ng/L and PFOS at 14,000 ng/L, greater than the SWSL of 10 ng/L. Considering the current and historical datasets, PFOS is the prevalent PFAS in the FS1 Area with the highest concentrations mostly in the vicinity of the buildings and improved areas, with lesser concentrations spreading outward.

A summary of samples collected during the SA are presented in the table below:

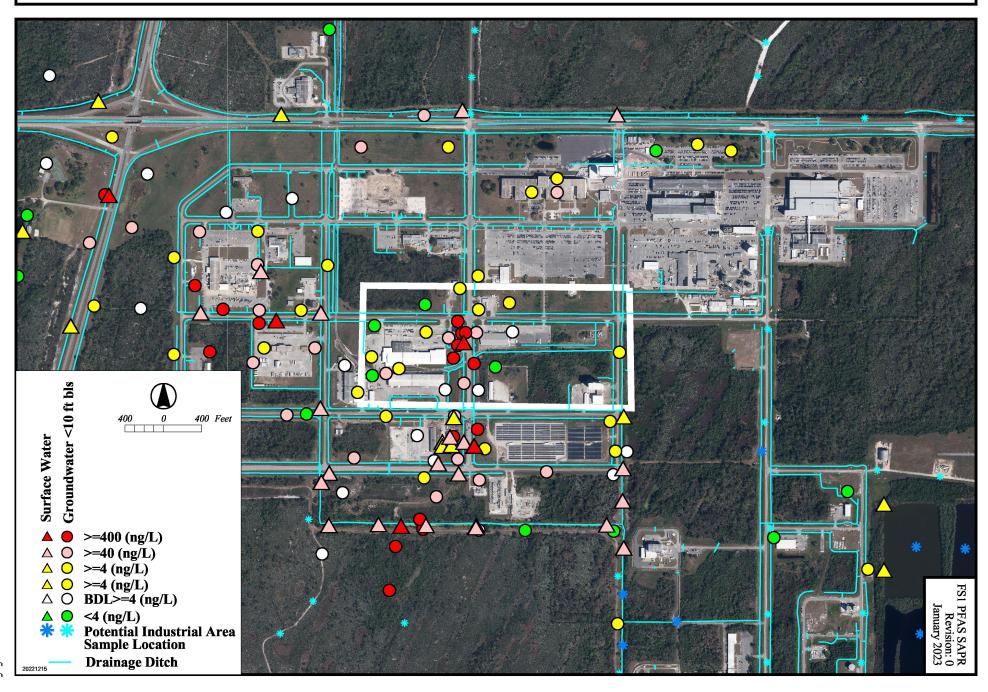
	PFOA	PFOS	PFBS	PFHxS	PFNA	HFPO-DA (GenX)
(USEPA) Soil RSLs (μg/kg)	19	13	1,900	130	19	23
Samples collected	6	6	6	6	6	6
No. of Detections	4	4	2	4	1	0
Results above RSL	0	2	0	0	0	0
(USEPA) Groundwater RSLs (ng/L)	6	4	600	39	5.9	6
Samples collected (DPT)	48	48	48	48	48	48
No. of Detections (DPT)	24	23	28	40	3	0
Results above RSL (DPT)	14	17	4	13	3	0
Samples collected (MW)	8	8	8	8	8	8
No. of Detections (MW)	7	8	7	8	1	0
Results above RSL (MW)	3	7	0	1	0	0
(Florida) Surface Water SWSLs (ng/L)	500	10	NA	NA	NA	NA
Samples collected	1	1	1	1	1	1
No. of Detections	1	1	1	1	1	0
Results above SWSL	1	1	NA	NA	NA	NA

NA = Not applicable; no screening criteria

A photographic log for SA activities is provided in Appendix D.

5.2 **RECOMMENDATIONS**

Based on the results of the SA, additional groundwater and surface water sampling should be considered. Additionally, TOC should be collected from representative groundwater (saturated soils) and surface water locations to further evaluate potential correlations between PFAS and TOC and assist in transport and fate analyses. Future sampling will be focused on surface water bodies to the southwest of the Industrial Area. Potential sample locations include influent into the Gator Pond, effluent from the Gator Pond, associated borrow pits that are part of the stormwater management system, tributaries into Buck Creek, locations within Buck Creek, the junction of Buck Creek and the Banana River, and isolated borrow pits northeast of Gator Pond, and locations along the Banana River. Additionally, installation of monitoring wells should be considered to evaluate the interaction between the groundwater and surface water at the site. Potential groundwater and surface water samples are shown on Figure 5-1. It should be noted that not all potential samples are expected to be sampled during the next phase of the investigation but may be considered as funding allows. The results and path forward were presented to the KSC Remediation Team (KSCRT) in October 2022 (Meeting Minute 2210-M08). An action item was taken (2210-A08) to provide FDEP with locations of potential monitoring wells once they are determined. The draft meeting minutes are included in Appendix E.



SECTION VI REFERENCES

FDEP, 2014. SRCO for PRL 122, Fire Station #4 Letter to NASA Environmental Assurance Branch Attn: Mrs. Rosaly J Santos-Ebaugh. April.

FDEP, 2017. FDEP Standard Operating Procedure FS 2200 Groundwater Sampling, FS2100 Surface Water Sampling, FS3000 Soil Sampling, FDEP-SOP-001/01, January.

FDEP, 2019. FDEP Standard Operating Procedure for PFAS Sampling. Draft. October.

FDEP, 2022. PFAS Dynamic Plan, Division of Waste Management Florida Department of Environmental Protection. March.

NASA, 2005. Fire Station No. 4 M6-695 PRL No. 122 SWMU Assessment Report Revision 0. Kennedy Space Center. May.

NASA, 2006. Fire Station #4 (PRL #122) Phase II Confirmatory Sampling and Interim Measure Discussion Advance Data Package (ADP). June.

NASA, 2008. Fire Station #4 PRL No. 122 Interim Measures Report ADP. May.

NASA, 2017. Sampling and Analysis Plan for the RCRA Corrective Action Program at the John F. Kennedy Space Center, Florida. KSC TA 6169. Revision 5. August.

NASA, 2018. Supply Warehouse #3, SWMU 088, Operations, Maintenance, and Monitoring Report, Kennedy Space Center, Florida. Revision 0. February.

NASA, 2019. Phase I Solid Waste Management Unit Assessment and Confirmatory Sampling Report Center-Wide Per-and Polyfluoroalkyl Substances, Potential Release Location 237. Kennedy Space Center, Florida. Revision 0. June.

NASA, 2021a. 2019-2020 Long-Term Groundwater Monitoring Report Industrial Area Kennedy Space Center, Florida. Revision 0. June.

FS1 PFAS SAPR Revision: 0 January 2023

NASA, 2021b. PFAS Investigation Derived Waste Disposal Memorandum. April 29.

NASA, 2022. Phase II and III Solid Waste Management Unit Assessment and Confirmatory Sampling Report Center-Wide Per- and Polyfluoroalkyl Substances, Potential Release Location 237, Kennedy Space Center, Florida. Revision 0. September.

USEPA, 2016a. Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA). Office of Water. EPA Document Number: 822-R-16-005. May.

USEPA, 2016b. Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS). Office of Water. EPA Document Number: 822-R-16-004. May.

USEPA, 2022. Regional Screening Levels calculated with the RSL Calculator based on a hazard quotient of 0.1.

APPENDIX A HISTORICAL ANALYTICAL RESULTS (PROVIDED IN ELECTRONIC VERSION ONLY)

Table A-1. Historical Soil Analytical Results

Location ID (PFAS-)		C	SB	0057		SB0058		SBC	0059	SB0	060
Date	CAS No.	Screening Criteria ^{1,2}	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21
Sample Depth (ft bls)		Criteria	0 - 0.5	0.5 - 2	0 - 0.5	0 - 0.5*	0.5 - 2	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2
PFAS with Screening Criteria (μg/kg)											
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	23	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	1900	0.71 U	0.6 U	0.72 U	0.68 U	0.6 U	0.64 U	0.66 U	0.56 U	0.61 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	130	0.71 U	0.6 U	1.7	2.4	0.6 U	2.3	0.97	0.56 U	0.61 U
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	19	0.71 U	0.6 U	0.72 U	0.68 U	0.6 U	0.64 U	0.66 U	0.56 U	0.61 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	19	0.71 U	0.6 U	0.63 I	0.67 I	0.6 U	0.54 I	0.66 U	0.56 U	0.61 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	13	1.6	0.6 U	29.3	49.1	3.6	45.4	17.4	7.7	12.7
PFAS without Screening Criteria (μg/kg)											
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		NA	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		NA	NA	NA	NA	NA	NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		NA	NA	NA	NA	NA	NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		NA	NA	NA	NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		NA	NA	NA	NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		NA	NA	NA	NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		1.4 U	1.2 U	1.4 U	1.4 U	1.2 U	1.3 U	1.3 U	1.1 U	1.2 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		1.4 U	1.2 U	1.4	0.71 I	1.2 U	1.3 U	1.3 U	1.1 U	1.2 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2		0.71 U	0.6 U	0.72 U	0.68 U	0.6 U	0.64 U	0.66 U	0.56 U	0.61 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		0.43 I	0.6 U	0.72 U	0.68 U	0.6 U	0.32 I	0.66 U	0.56 U	0.61 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		0.71 U	0.6 U	0.72 U	0.68 U	0.6 U	0.64 U	0.66 U	0.56 U	0.61 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		0.71 U	0.6 U	0.72 U	0.68 U	0.6 U	0.48 I	0.66 U	0.56 U	0.61 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6		NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		NA	NA	NA	NA	NA	NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		0.71 U	0.6 U	0.72 U	0.68 U	0.6 U	0.64 U	0.66 U	0.56 U	0.61 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		0.71 U	0.6 U	0.72 U	0.68 U	0.6 U	0.35 I	0.66 U	0.56 U	0.61 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		0.71 U	0.6 U	0.72 U	0.68 U	0.6 U	0.64 U	0.66 U	0.56 U	0.61 U

Table A-1. Historical Soil Analytical Results

Location ID (PFAS-)		G		SB0125		SB0126			
Date	CAS No.	Screening 1.2	9/24/21	9/24/21	9/24/21	9/24/21	9/24/21		
Sample Depth (ft bls)		Criteria ^{1,2}	0 - 0.5*	0 - 0.5	0.5 - 2	0 - 0.5	0.5 - 2		
PFAS with Screening Criteria (μg/kg)									
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	23	NA	NA	NA	NA	NA		
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	1900	0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	130	0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	19	0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		
Perfluoro-n-octanoic acid (PFOA)	335-67-1	19	0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	13	0.28 I	0.7 U	0.55 U	0.61 U	0.63 U		
PFAS without Screening Criteria (μg/kg)									
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		NA	NA	NA	NA	NA		
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		NA	NA	NA	NA	NA		
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		NA	NA	NA	NA	NA		
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		NA U	NA U	NA U	NA U	NA U		
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		NA U	NA U	NA U	NA U	NA U		
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		NA U	NA U	NA U	NA U	NA U		
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		NA	NA	NA	NA	NA		
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		1.1 U	1.4 U	1.1 U	1.2 U	1.3 U		
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		1.1 U	1.4 U	1.1 U	1.2 U	1.3 U		
Perfluoro-n-butanoic acid (PFBA)	375-22-4		NA	NA	NA	NA	NA		
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		NA	NA	NA	NA	NA		
Perfluoro-n-decanoic acid (PFDA)	335-76-2		0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		NA	NA	NA	NA	NA		
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		NA	NA	NA	NA	NA		
Perfluorooctane sulfonamide (PFOSA)	754-91-6		NA	NA	NA	NA	NA		
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		NA	NA	NA	NA	NA		
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		NA	NA	NA	NA	NA		
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		0.53 U	0.7 U	0.55 U	0.61 U	0.63 U		

All results reported in microgram per kilogram (µg/kg)

Bolding indicates analyte was detected

Shading indicates exceedance of screening criteria

USEPA = United States Environmental Protection Agency

ft bls = feet below land surface

NA = Not Applicable; compound not analyzed

PFAS = per- and polyfluoroalkyl substances

 $I = Estimated result < Limit of Quantitation and <math>\geq Detection Limit$

U = Analyte was not detected

¹ The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

² The Soil RSL is cited from the USEPA Regional Screening Levels and calculated with the EPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

³ HFPO-DA is commonly referred to as GenX

^{*} Duplicate sample results are included in this table and labeled with asterisk

^{-- =} No applicable screening criteria

Table A-2. Historical DPT Analytical Results

Location ID		Screening		PFAS-I	DPT0063			PFAS-DPT0066		PFAS-DPT0067				
Date	CAS No.		11/7/2018	11/7/2018	11/7/2018	11/7/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	
Sample Depth (ft bls)		Criteria ^{1,2}	8 - 12	23 - 27	33 - 37	43 - 47	8 - 12	23 - 27	43 - 47	8 - 12	23 - 27	33 - 37	43 - 47	
PFAS with Screening Criteria (ng/L)														
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	1.9 M	0.52 JM	0.96 UM	0.96 UM	170 M	220 M	86 M	3 M	3.4 M	4.4 M	15 M	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	33 M	3.2	0.47 JM	0.96 UM	3600 D	5800 D	710 D	16	13	24	210	
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	1.4 U	1.4 UM	1.4 U	1.4 U	2.8 M	65 M	14 M	3.7 M	2.4 M	4.4 M	1.7 JM	
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	13 M	1.4 JM	1.4 UM	1.4 UM	690 D	810 D	92	8.8 M	4.4 M	11 M	17 M	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	7 M	1.4 JM	2.9 UM	2.9 UM	1500 DB	14000 DB	3900 DB	290 B	110 B	500 DB	1100 DB	
PFAS without Screening Criteria (ng/L)														
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		9.5 U	9.5 U	9.6 U	9.6 U	8.7 U	8.6 U	8.5 U	8.5 U	8.5 UM	8.5 U	8.8 U	
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		9.5 U	9.5 U	9.6 U	9.6 U	8.7 U	8.6 U	8.5 U	8.5 U	8.5 U	8.5 U	8.8 U	
Perfluoro-n-butanoic acid (PFBA)	375-22-4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-n-decanoic acid (PFDA)	335-76-2		0.95 U	0.95 U	0.96 U	0.96 UM	0.87 UQ	0.86 UMQ	0.85 UMQ	2.4 MQ	3.1 Q	4.7 Q	0.51 JMQ	
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		1.4 U	1.4 U	1.4 U	1.4 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		4.1	1.4 UM	1.4 U	1.4 U	490 D	290	34	62	2.7	6.1	7.2	
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		6.2 M	1.2 JM	0.96 UM	0.96 UM	890 D	620 D	130	120 M	12 M	17 M	23 M	
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorooctane sulfonamide (PFOSA)	754-91-6		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		2.8 U	2.9 U	2.9 U	2.9 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.5 U	2.6 U	
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		2.8 U	2.9 U	2.9 U	2.9 U	2.6 UM	2.6 UM	2.5 U	2.5 U	2.6 U	2.5 U	2.6 U	
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		1.4 U	1.4 U	1.4 U	1.4 U	1.3 UM	1.3 UM	1.3 U	1 JM	0.63 JM	0.69 JM	1.3 UM	

Table A-2. Historical DPT Analytical Results

Location ID			PFAS-DPT0068									DELC DECAME				
		Screening							PFAS-DPT0069				PFAS-DP			
Date	CAS No.	Criteria ^{1,2}	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	10/31/2018	3/20/2019	3/20/2019	3/20/2019	3/20/2019	
Sample Depth (ft bls)			8 - 12	23 - 27	33 - 37	43 - 47	8 - 12	23 - 27	33 - 37	33 - 37*	43 - 47	8 - 12	23 - 27	33 - 37	43 - 47	
PFAS with Screening Criteria (ng/L)																
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	39 M	16 M	630 DM	110 M	260	1600 D	1700 D	1900 D	2400 D	6.6	0.94 U	0.92 UM	0.92 U	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	710 D	48	3500 D	520 D	4600 D	32000 D	27000 D	28000 D	28000 D	7.3 M	0.53 JM	1.4 JM	0.39 JM	
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	49	0.59 JM	4.5 M	1.1 J	400 DM	290 D	140 JDM	170 DM	140 M	1.4 U	1.4 U	1.4 UM	1.4 U	
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	170	5.7 M	290	55 M	1200 D	5500 D	4900 D	5100 D	2800 D	3.3 M	1.4 UM	0.8 JM	1.4 UM	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	930 DB	64 B	540 DB	130 BM	39000 B	210000 B	240000 B	230000 B	35000 B	2.7 JM	2.8 UM	12	1.5 JM	
PFAS without Screening Criteria (ng/L)		_														
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		8.8 UM	8.6 U	9 U	9.1 U	10 U	88 UM	88 U	89 U	8.8 U	9.5 U	9.4 U	9.2 U	9.2 U	
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		8.8 U	8.6 U	9 U	9.1 U	10 U	88 U	88 U	89 U	88 U	9.5 U	9.4 U	9.2 U	9.2 U	
Perfluoro-n-butanoic acid (PFBA)	375-22-4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-n-decanoic acid (PFDA)	335-76-2		10 Q	0.86 UQ	0.47 JMQ	0.91 UQ	78 MQ	18 DQ	32 DMQ	30 DMQ	4.9 Q	0.95 U	0.94 U	0.92 U	0.92 U	
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		1.3 U	1.3 U	1.4 U	1.4 U	1.5 U	13 U	13 U	13 U	13 U	1.4 U	1.4 U	1.4 U	1.4 U	
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		230	4.7	180	26	1000 D	2400 D	2100 D	2000 D	1500 D	1.3 JM	0.67 JM	1.4 UM	1.4 U	
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		480 D	18 M	740 DM	120 M	1800 D	8800 D	8300 D	8800 D	7000 D	3.3 M	0.94 UM	0.92 UM	0.92 U	
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluorooctane sulfonamide (PFOSA)	754-91-6		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		2.6 U	2.6 U	2.7 U	2.7 U	3.1 U	27 U	26 U	27 U	2.6 U	2.9 U	2.8 U	2.8 U	2.7 U	
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		2.6 UM	2.6 UM	2.7 UM	2.7 U	3.1 U	27 U	26 U	27 U	26 U	2.9 U	2.8 U	2.8 U	2.7 U	
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		2.6 M	1.3 UM	1.4 UM	1.4 UM	1.5 UM	13 U	13 UM	13 U	13 U	1.4 U	1.4 U	1.4 U	1.4 UM	

Table A-2. Historical DPT Analytical Results

Location ID				PFAS-D	PT0120				PFAS-DPT0122				PFAS-D	PT0141	
Date	CAS No.	Screening	3/28/2019	3/28/2019	3/28/2019	3/28/2019	3/28/2019	3/28/2019	3/28/2019	3/28/2019	3/28/2019	3/29/2019	3/29/2019	3/29/2019	3/29/2019
Sample Depth (ft bls)		Criteria ^{1,2}	8 - 12	23 - 27	33 - 37	43 - 47	8 - 12	23 - 27	23 - 27*	33 - 37	43 - 47	8 - 12	23 - 27	33 - 37	43 - 47
PFAS with Screening Criteria (ng/L)							<u> </u>				-				
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	NA	NA	NA	NA	NA	NA	NA						
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	2400 D	4100 D	4200 D	1900 D	4.8	1.9 JM	1.9 JM	1.9 J	1.9 JM	0.93 U	0.71 J	0.95 U	0.98 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	32000 D	33000 D	27000 D	13000 D	10 M	5.7 M	5.3 M	5.3 M	5.4 M	3.9 M	4.6 M	0.41 JM	0.53 JM
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	78 D	28 UM	13 JD	22 JD	1.4 U	1.4 U	1.4 U	1.4 U	1.4 UM	1.4 U	1.4 U	1.4 U	1.5 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	15000 DM	3500 DM	2400 DM	1100 DM	2.2 M	3.7 M	3.5 M	4.6	3.9 M	1.1 J	1.4 U	1.4 U	0.76 JM
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	34000 D	2300 D	6300 D	4200 D	4.4 M	3.7 JM	3.8 JM	17 M	4.5 M	3.2 JM	2.7 UM	2.8 UM	2.9 UM
PFAS without Screening Criteria (ng/L)															
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		NA	NA	NA	NA	NA	NA	NA						
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		NA	NA	NA	NA	NA	NA	NA						
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		NA	NA	NA	NA	NA	NA	NA						
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		NA	NA	NA	NA	NA	NA	NA						
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		NA	NA	NA	NA	NA	NA	NA						
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		NA	NA	NA	NA	NA	NA	NA						
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		NA	NA	NA	NA	NA	NA	NA						
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		190 U	180 U	220 U	200 U	9.2 U	9.3 U	9.4 U	9.4 U	9.3 U	9.3 U	9.1 U	9.5 U	9.8 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		190 U	180 U	220 U	200 U	9.2 UJ1	9.3 U	9.4 U	9.4 U	9.3 U	9.3 U	9.1 U	9.5 U	9.8 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		NA	NA	NA	NA	NA	NA	NA						
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		NA	NA	NA	NA	NA	NA	NA						
Perfluoro-n-decanoic acid (PFDA)	335-76-2		19 U	18 U	22 U	20 U	0.92 U	0.93 U	0.94 U	0.94 U	0.93 U	0.93 U	0.91 U	0.95 U	0.98 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		28 U	28 U	32 UM	29 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.5 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		NA	NA	NA	NA	NA	NA	NA						
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		2200 D	2100 D	1200 D	510 D	1.9 J	2 M	2.2 M	2.4 M	2.1	0.74 JM	5.7	1.4 U	1.5 UM
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		7000 DB	11000 DB	6500 DB	2600 DB	1.8 B	4.1 MB	4.2 MB	3.9 B	3 MB	1.9 JM	17 M	1.9 J	2 J
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		NA	NA	NA	NA	NA	NA	NA						
Perfluorooctane sulfonamide (PFOSA)	754-91-6		NA	NA	NA	NA	NA	NA	NA						
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		NA	NA	NA	NA	NA	NA	NA						
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		NA	NA	NA	NA	NA	NA	NA						
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		56 U	55 U	65 U	59 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.7 U	2.8 U	2.9 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		56 U	55 U	65 U	59 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.7 U	2.8 U	2.9 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		28 U	28 U	32 UM	29 U	1.4 UM	1.4 U	1.4 U	1.4 U	1.4 UM	1.4 U	1.4 U	1.4 U	1.5 U

Table A-2. Historical DPT Analytical Results

Location II				PFAS-D	PT0184			PFAS-D	PT0185				PFAS-DPT0186		
Dat	e CAS No.	Screening	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21	1/26/21
Sample Depth (ft bls		Criteria ^{1,2}	6 - 10	21 - 25	31 - 35	41 - 45	6 - 10	21 - 25	31 - 35	41 - 45	6 - 10	21 - 25	31 - 35	31 - 35*	41 - 45
PFAS with Screening Criteria (ng/L)	•														
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	NA	NA	NA										
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	11 U	4.2 U	4.5 U	4.5 U	127	34.4	15	9.6	33 U	26.3	23	21.2	20
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	10.9 I	4.2 U	3 I	2.4 I	858	896	52.4	18.8	94.3	108	43.7	41.6	57.5
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	11 U	4.2 U	4.5 U	4.5 U	64.6	4 U	7.6	5 U	33 U	5.2 U	4 U	4 U	4 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	5.9 I	4.2 U	4.5 U	4.5 U	349	93.7	18.1	6.9	33 U	58.5	16.3	15.3	24.6
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	7.9 I	4.2 U	3.9 I	4.5 U	3180	190	1210 L	268	161	5.2 U	25.9	15.8	4 U
PFAS without Screening Criteria (ng/L)															
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		NA	NA	NA										
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		NA	NA	NA										
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		NA	NA	NA										
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		NA	NA	NA										
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		NA	NA	NA										
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		NA	NA	NA										
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		NA	NA	NA										
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		9.1 U	8.3 U	91 U	9.1 U	200 U	8 U	56 U	10 U	66 U	10 U	8 U	8 U	8 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		9.1 U	8.3 U	91 U	9.1 U	200 U	8 U	11 U	10 U	66 U	10 U	8 U	8 U	8 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		NA	NA	NA										
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		NA	NA	NA										
Perfluoro-n-decanoic acid (PFDA)	335-76-2		11 U	4.2 U	4.5 U	4.5 U	100 U	4 U	3.2 I	5 U	33 U	5.2 U	4 U	4 U	4 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		11 U	4.2 U	45 U	4.5 U	100 U	20 U	28 U	5 U	33 U	5.2 U	20 U	20 U	4 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		NA	NA	NA										
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		11 U	4.2 U	4.5 U	4.5 U	804	56.5	18.1	5.1	33 U	39	16.8	15.5	19.9
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		11 U	4.2 U	4.5 U	4.5 U	708	53.2	17.9	6.3	33 U	72.4	16.7	15.5	29.3
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		NA	NA	NA										
Perfluorooctane sulfonamide (PFOSA)	754-91-6		NA	NA	NA										
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		NA	NA	NA										
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		NA	NA	NA										
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		11 U	21 U	4.5 U	4.5 U	20 U	4 U	28 U	5 U	33 U	5.2 U	20 U	20 U	20 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		11 U	4.2 U	45 U	4.5 U	100 U	20 U	28 U	5 U	33 U	5.2 U	20 U	20 U	4 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		11 U	4.2 U	45 U	4.5 U	100 U	4 U	28 U	5 U	33 U	5.2 U	4 U	4 U	4 U

Table A-2. Historical DPT Analytical Results

Location ID		Screening		PFAS-D	PT0233			PFAS-D	PT0234	
Date	CAS No.	Criteria ^{1,2}	9/15/21	9/15/21	9/15/21	9/15/21	9/16/21	9/16/21	9/16/21	9/16/21
Sample Depth (ft bls)		Criteria	6 - 10	21 - 25	31 - 35	41 - 45	6 - 10	21 - 25	31 - 35	41 - 45
PFAS with Screening Criteria (ng/L)										
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	4 U	4 U	4.9	4 U	4 U	4.6	3.8 I	4 U
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	3.4 I	2 I	2.8 I	4 U	2.5 I	4.3	5.5	4 U
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	13	4 U	4 U	4 U	6.8	4 U	4 U	4 U
PFAS without Screening Criteria (ng/L)										
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		NA							
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		NA							
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		NA							
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		16 U							
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		16 U							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		16 U							
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		NA							
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		NA							
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		NA							
Perfluoro-n-decanoic acid (PFDA)	335-76-2		4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		NA							
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		4 U	4 U	4 U	4 U	4 U	2.7 I	4 U	4 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		4 U	4 U	4 U	4 U	4 U	5.2	2 I	4 U
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		NA							
Perfluorooctane sulfonamide (PFOSA)	754-91-6		NA	NA	NA	NA	8 U	8 U	8 U	8 U
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		NA							
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		NA							
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U

Table A-2. Historical DPT Analytical Results

Location ID		Screening			S014-D1	PT1003		
Date	CAS No.	Criteria ^{1,2}	2/28/22	2/28/22	2/28/22	2/28/22	2/28/22	2/28/22
Sample Depth (ft bls)		Criteria	3 - 7	13 - 17	23 - 27	33 - 37	43 - 47	43 - 47*
PFAS with Screening Criteria (ng/L)								
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	16 U	80 U	16 U	21 U	16 U	16 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	8 U	40 U	8 U	11 U	8 U	8 U
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	8 U	8 U	8 U	7.7 J	8 U	7.5 J
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	8 U	8 U	3.9 J	11 U	41.7	8 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	8 U	8 U	2.9 J	5.1 J	43.8	4.3 J
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	8 U	2.5 J	10	11 U	14.7	8 U
PFAS without Screening Criteria (ng/L)								
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		16 U	16 U	16 U	21 U	16 U	16 U
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		16 U	16 U	16 U	21 U	16 U	16 U
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		16 U	16 U	16 U	21 U	16 U	16 U
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		NA	NA	NA	NA	NA	NA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		NA	NA	NA	NA	NA	NA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		NA	NA	NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		16 U	16 U	16 U	21 U	16 U	16 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		16 U	16 U	16 U	21 U	16 U	16 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		80 U	80 U	80 U	110 U	48.8	80 U
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		8 U	8 U	8 U	11 U	8 U	8 U
Perfluoro-n-decanoic acid (PFDA)	335-76-2		8 U	8 U	8 U	11 U	39.7	8 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		8 U	8 U	8 U	11 U	44.7	8 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		8 U	8 U	8 U	11 U	8 U	8 U
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		8 U	8 U	8 U	11 U	38.1	8 U
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		8 U	40 U	8 U	3.9 J	33.8	3.2 J
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		8 U	8 U	8 U	11 U	8 U	8 U
Perfluorooctane sulfonamide (PFOSA)	754-91-6		8 U	8 U	8 U	11 U	8 U	8 U
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		8 U	40 U	8 U	11 U	8 U	8 U
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		40 U	40 U	40 U	53 U	39.2	40 U
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		8 U	40 U	8 U	11 U	37.3	8 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		8 U	8 U	8 U	11 U	49.7	8 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		8 U	8 U	8 U	11 U	43.3	8 U

- 1 The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.
- 2 The Groundwater RSL is cited from the EPA Regional Screening Levels and calculated with the EPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)
- 3 HFPO-DA is commonly referred to as GenX
- * Duplicate sample results are included in this table and labeled with asterisk
- -- = No applicable screening criteria

Bolding indicates analyte was detected

Shading indicates exceedance of screening criteria

FS1 = Fire Station #1

USEPA = United States Environmental Protection Agency

ft bls = feet below land surface

NA = Not Applicable; compound not analyzed

PFAS = per- and polyfluoroalkyl substances

B = Analyte detected above one-half the reporting limit in associated blank

D = Reported value is from a dilution

- $I = Estimated result < Limit of Quantitation and <math>\geq Detection Limit$
- J = Result is between the Method Detection Limit and Limit of Quantitation and is an estimated value
- M = Presence of material is verified but not quanitifed
- Q = Out of holding time
- U = Analyte was not detected

Table A-3. Historical Monitoring Well Analytical Results

Location ID		Screening	CM_S-MW0036	CM_S-MW0037	CM_S-MW0038	CM_S-MW0048
Date	CAS No.	Criteria ^{1,2}	6/21/2021	6/21/2021	6/21/2021	6/21/2021
Screen Interval (ft bls)			5 - 15	5 - 15	5 - 15	5 - 15
PFAS with Screening Criteria (ng/L)						
Hexafluoropropylene oxide dimer acid (HFPO-DA) [GenX] ³	13252-13-6	6	6.67 U	6.67 U	6.67 U	6.67 U
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	600	0.737 I	1.3 I	1.27 I	0.891 I
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	39	1.45 I	1.24 U	1.92 I	1.39 I
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	5.9	0.98 U	2.71 I	0.98 U	0.98 U
Perfluoro-n-octanoic acid (PFOA)	335-67-1	6	1.98 I	4.66	4.89	3.06 I
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	4	13	56	8.97	3.77 I
PFAS without Screening Criteria (ng/L)			_			
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4		NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2		NA	NA	NA	NA
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4		NA	NA	NA	NA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CL-PF3ONS)	756426-58-1		0.9 U	0.9 U	0.9 U	0.9 U
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CL-PF3OUDS)	763051-92-9		0.9 U	0.9 U	0.9 U	0.9 U
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4		0.86 U	0.86 U	0.86 U	0.86 U
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2		NA	NA	NA	NA
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6		1.58 U	1.58 U	1.58 U	1.58 U
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9		0.9 U	0.9 U	0.9 U	0.9 U
Perfluoro-n-butanoic acid (PFBA)	375-22-4		NA	NA	NA	NA
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		NA	NA	NA	NA
Perfluoro-n-decanoic acid (PFDA)	335-76-2		1.44 U	3.36 I	1.44 U	1.44 U
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1		1.3 U	1.3 U	1.3 U	1.3 U
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		NA	NA	NA	NA
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9		1.16 U	3.11 I	2.5 I	1.47 I
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4		1.23 I	7.01	3.09 I	1.59 I
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1		NA	NA	NA	NA
Perfluorooctane sulfonamide (PFOSA)	754-91-6		NA	NA	NA	NA
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4		NA	NA	NA	NA
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3		NA	NA	NA	NA
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7		1.14 U	1.14 U	1.14 U	1.14 U
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8		1.23 U	1.23 U	1.23 U	1.23 U
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8		1.24 U	1.24 U	1.24 U	1.24 U

-- = No applicable screening criteria

Bolding indicates analyte was detected

Shading indicates exceedance of screening criteria

FS1 = Fire Station #1

USEPA = United States Environmental Protection Agency

ft bls = feet below land surface

NA = Not Applicable; compound not analyzed

PFAS = per- and polyfluoroalkyl substances

 $I = Estimated result < Limit of Quantitation and \ge Detection Limit$

U = Analyte was not detected

¹ The USEPA Regional Screening Levels (RSLs) for HFPO-DA, PFBS, PFHxS, PFNA, PFOA, and PFOS are presented in this table.

² The Groundwater RSL is cited from the USEPA Regional Screening Levels and calculated with the EPA RSL Calculator based on a hazard quotient of 0.1 (USEPA, 2022)

³ HFPO-DA is commonly referred to as GenX

APPENDIX B FIELD DOCUMENTATION (PROVIDED IN ELECTRONIC VERSION ONLY)

SITE NAME: City	go (CGO)						ITE OCATION:	Kennedy Sp	ace	Center (KSC)), Florida			
	ID: MW0012	SAN San	IPLE ID:	CGO-MW(0012-00	07.5-2021102 screen (feet l	9 ols)-Top dep	oth] x 0.5-bottor	n of s	screen (feet b	DATE:	10/29/2	2021	
		1				PUF	RGING DAT	A						
TO WATER	PTH (feet btoc): 2.2		BING HEIGH t als): -0.3			EPTH TO WA asing Height (`	,		WELL SCRE	EN INTERVAL	. DEPTH	(feet bls): 2.5 to 12.5
WELL DIAMETER	(inches): 1	TUBING DIAMETER	R (inches): 3	_		PUMP TYPE ER: Peristaltion	Pump	TOP DEPTH			or depth to wate s): 2.51	er		OM DEPTH ls): 12.5
	UME PURGE: if applicable)	1 WELL VO	LUME = (T	OTAL WEI				TO WATER) x 0.61 = 6.1	ΧV	WELL CAPA	CITY			
	IT VOLUME PU if applicable)	RGE: 1 EQI	JIPMENT V						TUB	SING LENGTI	H) + FLOW CE	LL VOLU	JME	
(,						_Liters.								
	MP OR TUBING WELL (feet): 7.5			UMP OR T			PURGE START	ED: 1135		PURGING ENDED AT			. VOLUM ED (Liter	
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURO RAT (mlpr	E W	PTH TO ATER eet)	pH (standard units)	TEMP. (°C)	COND. (μS/cm)		SSOLVED DXYGEN (mg/L)	TURBIDITY (NTUs)		DRP mV)	COLOR (describe)
1155	7.0	7.0	350) 2	.26	6.71	27.96	268.18		1.78	0.45	7	70.4	Clear
1245	17.5	24.5	350) 2	.26	6.70	28.01	269.11		1.79	0.66	6	62.4	Clear
1250	3.5	28.0	350) 2	.26	6.73	27.92	267.93		1.78	0.65	6	31.9	Clear
1255	Sample	Collected	I											
	ACITY (Liters P		0.75 " = 0.0		= 0.15; 3/16'		.23; 2 " = 1/4" = 0.009	= 0.61; 3" = 8; 5/16" = 6		,		6" = 0.038;	5.57; 5/8"	12" = 22.26 = 0.06
SAMPLING	DATA	,	.,,, .	,		/		/	0.0.0	,, 0.0		0.000,	0.0	0.00
	BY (PRINT) / AF len /Tetra Tech	FILIATION:		SAMPLE	R(S) S	IGNATURES				MPLING			PLING	
								_	INIT	TATED AT:	1255	END	ED AT: 1	1300
PUMP OR	TUBING WELL (feet): 7.5	5		SAMPLE		e: nL per minute)· 350			BING TERIAL COD	IE: UDDE	<u> </u>		
	ONTAMINATIO		N	FIELD-F	ILTER	ED: Y (1		LTER SIZE:			DUPLICATE	: `	· · · · · · · · · · · · · · · · · · ·	(N)
		E CONTAINE	:R	Filtration	Equipi	ment Type:								
		CIFICATION					SAMPLE PR	ESERVATION			INTENI			SAMPLING
SAMPLE I CODE	D # CONTAIN		TERIAL	VOLUME	PRI	ESERVATIVE USED		TAL VOL IN FIELD (mL)		FINAL pH	ANALYSIS METH		- F	EQUIPMENT CODE
9	2	F	IDPE	250 ml		None		None	S	ee above	PFAS QSM T	able B-15		PP
	TD 14.5 ft to T		or Class:	CC - Ols -	r Class	. DE - D-	lyothylana:	DD - Dali	ron	ono: 6 - 0	ilioono: T = T	Toflor:	0 - 04	hor (Specify)
SAMPLING		AG = Ambe		CG = Clea	r Glass B = Ba	•	lyethylene; = Bladder P	Pump: ES		•	silicone; T = T	Γeflon;		her (Specify) altic Pump
EQUIPMEN		RFPP = Reve						Γubing Gravity			Vacuum Trap;			(Specify)

SITE NAME: For	rmer Central Hea	at Plant (CHP)					SITE .OCATION:	Kennedy Sp	ace (Center (KSC)), Florid	da .			
	I ID: MW0028	SAMF	PLE ID: CH			2.5-20211029	9	oth] x 0.5-botton					10/29/2	021	
STATIC DE	DTH	CASI	NG HEIGHT	ST/	ATIC D	PUR EPTH TO WA	ATER (feet h			WELL SCRE	EN INI	TER\/AI	DEDTH	(feet ble): 40 to 45
	R (feet btoc): 2.1		als): NA			asing Height (1		,		WELL SCILE	LIN IIN	ILIVAL	DEFIII	(leet bis). 40 to 45
WELL DIAMETER	R (inches): 2	TUBING DIAMETER ((inches): 3/1	_		PUMP TYPE R: Peristaltic	c Pump			op of screen o		า to wate	r	BOTTO (feet bl	OM DEPTH ls): 45
	UME PURGE: t if applicable)	1 WELL VOL	UME = (TOT	TAL WEL		TH - STAT	FIC DEPTH	TO WATER)	ΧV	NELL CAPAC	CITY				
EQUIPMEN	NT VOLUME PU	RGE: 1 EQUI	PMENT VOI	L. = PUM		_	ING CAPAC	CITY X	TUB	BING LENGTH	H) + FL	OW CEL	L VOLU	ME	
(only fill out	t if applicable)				0.78	Liters. (0).005 x 60) +	+ 0.475 = 0.78							
	IMP OR TUBING WELL (feet): 42		FINAL PUI				PURGE	ED: 1035		PURGING ENDED AT	· 110	5		. VOLUM	
22		CUMUL.	1	DEI	PTH	pH			DI	SSOLVED		I		•	1
TIME	VOLUME PURGED (Liters)	VOLUME PURGED (Liters)	PURGE RATE (mlpm)	WA	TER eet)	(standard units)	TEMP. (°C)	COND. (μS/cm)		OXYGEN (mg/L)		RBIDITY NTUs)		DRP mV)	COLOR (describe)
1045	2.5	2.5	250	,	.23	7.06	27.28	901.23		0.08	(0.87	(52.6	Clear
1055	2.5	5.0	250	2.	.23	7.06	27.27	887.96		0.06	(0.76	-6	64.7	Clear
1105	2.5	7.5	250	2.	.23	7.05	27.31	883.80		0.05	(0,79	-7	70.4	Clear
1110	Sample	Collected													
	PACITY (Liters Pacific		. 75" = 0.076 Ft.): 1/8" =		= 0.15; 3/16"		.23; 2 " = 1/4" = 0.009	= 0.61; 3" = 8; 5/16" = 0	1.40 0.015	; 4" = 2.46 5; 3/8" = 0		" = 3.86; 1/2" =	6" = = 0.038;	5.57; 5/8"	12" = 22.26 = 0.06
SAMPLING		- FILLATION		OAMBLE		IGNATURES									
	BY (PRINT) / AF den /Tetra Tech	·FILIATION:		SAMPLE	3(8)8	IGNATURES				MPLING FIATED AT: 1	1110			PLING ED AT: 1	1115
											1110		LINDE		110
PUMP OR T	TUBING WELL (feet): 42	5		SAMPLE FLOW RA		e: nL per minute): 250			BING TERIAL COD	E: HD	PE			
FIELD DEC	CONTAMINATIO	N: (Y) N		FIELD-FII Filtration		ED: Y (N ment Type:	N) FI	LTER SIZE: _		μm	DUP	LICATE:	; Y	,	(N)
		E CONTAINER					SAMPLE PR	ESERVATION				INITENIE			CAMPUNO
CAMPLE			EDIAL							FINIAL	ANA	INTEND ALYSIS A	AND/OR		SAMPLING EQUIPMENT
SAMPLE I CODE	ID # CONTAIN		DDE V	OLUME	PRE	ESERVATIVE USED	_	TAL VOL IN FIELD (mL)		FINAL pH		METHO	OD .		CODE
1	2	Н	OPE 2	250 ml		None		None	S	ee above	PFA	AS QSM Ta	able B-15		PP
					<u> </u>										
DEMARKS	TD 44.5.8.4. T														
MATERIAL	. TD 14.5 ft to To . CODES:	AG = Amber	Glass; C(G = Clear	Glass	; PE = Po	olyethylene;	PP = Polypi	ropyl	ene; S = S	ilicone;	T = T	Teflon;	O = Oth	her (Specify)
	S/PURGING A	APP = After Pe RFPP = Revers	eristaltic Pum	np; E	B = Bai	iler; BP	= Bladder P		P = E	Electric Subm	ersible		PP :	= Perista	altic Pump (Specify)

SITE	mer Central Hea	at Plant (C	:HP)					OCATION:	Kennedy Sn	nace (Center (KSC)) Florida			
	ID: MW0029			FID: C	CHP-MW	0029-04	12.5-2021102		rteilledy Op	ace (center (NOC)		: 10/29/2	2021	
LOCATION	1D. WWW0029						screen (feet		th] x 0.5-bottor	n of s	screen (feet b		10/23/2	.021	
STATIC DE	PTH	(CASING	3 HEIGH	T S	TATIC D	EPTH TO W				WELL SCRE	EN INTERVA	L DEPTH	(feet bls	s): 40 to 45
TO WATER	R (feet btoc): 2.1	9 ((feet als	s): NA	(b	toc) - Ca	asing Height (feet als): NA	4						
WELL	(inches): 2	TUBING		ches): 3/			PUMP TYPE ER: Peristaltion	o Dumo			op of screen of atest (feet bla	or depth to wa	ter		OM DEPTH ls): 45
	UME PURGE:													(leet b	15). 45
(only fill out	if applicable)						Liters.								
	IT VOLUME PU if applicable)	RGE: 1 E	EQUIPN	MENT VC)L . = PU	MP VOL	UME + (TUB	ING CAPAC	ITY X	TUB	ING LENGTI	H) + FLOW CI	ELL VOLU	JME	
(Offig fill Out	п аррпсаые)					0.78	Liters. (0	0.005 x 60) +	0.475 = 0.78						
	MP OR TUBING WELL (feet): 42			FINAL PU				PURGE	ED: 1305		PURGING ENDED AT			VOLUN	ИЕ rs): 7.5
DEFITTIN	, ,	CUMU			Г	EPTH		STAINT	LD. 1303	DI	SSOLVED	. 1333			5). 7.3
TIME	VOLUME PURGED (Liters)	VOLUI PURG (Liter	SED	PURG RATE (mlpm	E V	TO /ATER (feet)	pH (standard units)	TEMP. (°C)	COND. (μS/cm)		OXYGEN (mg/L)	TURBIDIT' (NTUs)		DRP mV)	COLOR (describe)
1315	2.5	2.5	5	250		2.24	6.98	27.02	843.45		0.07	2.20	-7	22.8	Clear
1325	2.5	5.0)	250		2.24	7.01	26.91	844.50		0.04	3.76	-7	26.7	Clear
1335	2.5	7.5	5	250		2.24	7.01	27.01	848.01		0.03	5.78	-7	27.1	Clear
1340	Sample	Collec	cted												
	ACITY (Liters P			5" = 0.07 .): 1/8" =		' = 0.15; 3/16'		0.23; 2" = 1/4" = 0.009	,	1.40; 0.015	,		6; 6 " = 0.038;	5.57; 5/8"	12" = 22.26 = 0.06
SAMPLING		,		,	,			7			•	,			
SAMPLED Chuck Sord	BY (PRINT) / AF len / Tetra Tech	FILIATIO	ON:		SAMPL	ER(S) S	SIGNATURES				//PLING	4040		PLING	40.45
				4			///	_		INII	TATED AT:	1340	END	ED AT:	1345
PUMP OR	TUBING WELL (feet): 42	. 5				E PUMI	c: nL per minute	a): 250			SING FERIAL COD	E. HDDE	•		
	ONTAMINATIO		N		FIELD-	FILTERI	ED: Y (LTER SIZE:			DUPLICATE	 ≣: `	Y	(N)
		E CONTA			FIIIIalio	n Equipi	ment Type:								• • • • • • • • • • • • • • • • • • • •
		CIFICATIO						SAMPLE PR	ESERVATION	1		INTEN			SAMPLING
SAMPLE I CODE	D # CONTAIN		MATER COD		VOLUME	PR	ESERVATIVE USED		TAL VOL IN FIELD (mL)		FINAL pH	ANALYSIS METI			EQUIPMENT CODE
9	2		HDP	PE	250 ml		None		None	S	ee above	PFAS QSM	Table B-15		PP
	TD 14.5 ft to T		mber C	lace: C	.c - 0.	or Class	. DE - Da	lvothylene:	DD - Dobre	ropyd	ono: c - c	ilicono: T =	Toflon	0 - 0	hor (Specify)
SAMPLING		AG = At			CG = Cle	ar Glass B = Ba	<u> </u>	lyethylene; = Bladder P	Pump: ES		-	ilicone; T =	Teflon;		ther (Specify)
		RFPP = R							Γubing Gravity			Vacuum Trap			(Specify)

SITE NAME: Form	mal Central Hea	at Plant (CHP)					ITE OCATION:	Kennedy Sr	oace (Center (KSC)), Florida			
	ID: MW0032	SAMF	PLE ID: C			4.5-20211028	8	oth] x 0.5-bottor			DATE	E: 10/28/2	2021	
		1					RGING DATA							
STATIC DEF TO WATER	PTH (feet btoc): 5.5		NG HEIGHT als): -0.2			EPTH TO WA asing Height (f	•	,		WELL SCRE	EN INTERVA	'T DELLH	(feet bls	s): 42.1 to 47.1
WELL DIAMETER ((inches): 1	TUBING DIAMETER ((inches): 3/	_		PUMP TYPE R: Peristaltic	Pump			op of screen catest (feet bls	or depth to wa	ter		OM DEPTH ls): 47.1
WELL VOLU (only fill out i	JME PURGE: if applicable)	1 WELL VOL	UME = (TO				TIC DEPTH	TO WATER)	ΧV	NELL CAPAC	CITY			
FOLIIDMENT	T VOLUME PU	PGE: 1 FOUR	DMENT VO		24 ID VOI	Liters.	ING CAPAC	CITY X	TUR	ING LENGTI	H) + FLOW C	ELL VOLL	IME	
(only fill out i		NOL. I EQUI	T III LIVI VO		0.78	Liters.	140 0/11 /10		100	INO LENOTI	1) . 1 2000 0	LLL VOLC	/IVIL	
	MP OR TUBING		FINAL PU				PURGE			PURGING			VOLUM	
DEPTH IN W	VELL (feet): 44		DEPTH IN	`		4.5	STARTI	ED:. 1330		ENDED AT	:1349	PURG	ED (Liter	rs): 5.70
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	E WA	PTH TO ATER eet)	pH (standard units)	TEMP. (°C)	COND. (μS/cm)		SSOLVED OXYGEN (mg/L)	TURBIDIT (NTUs)		ORP (mV)	COLOR (describe)
1335	1.50	1.50	300.0) 5	.55	6.77	29.0	2868.0		0.98	2.05		4.2	Clear
1340	1.50	3.00	300.0) 5	.55	6.74	29.0	2912.0		0.20	1.25	-	12.0	1
1345	1.50	4.50	300.0) 5	.55	6.74	28.8	2915.0		0.10	0.98		19.5	1
1349	1.20	5.70	300.0) 5	.55	6.73	28.7	2919.0		80.0	1.111	2	21.5	Clear
1350	Samples	Collected												
		 										\perp		
		 						 				_		
			 					<u> </u>						
WELL CAPA	ACITY (Liters P	er Foot): 0	. 75 " = 0.076	6; 1 ":	= 0.15;	1.25 " = 0	.23; 2" =	= 0.61; 3" =	1.40;	; 4" = 2.46	6; 5 " = 3.86	6; 6 " =	= 5.57;	12" = 22.26
TUBING INS	BIDE DÍA. CAPA				3/16"			8; 5/16" = 0				" = 0.038;		= 0.06
SAMPLED B	BY (PRINT) / AF	FILIATION:		SAMPLE	R(S) S	GIGNATURES	:	1	CAL	MPLING		CAM	PLING	
Robert Siege	el/Tetra Tech				<u> </u>					TATED AT: 1	1350		ED AT:14	100
PUMP OR T	UBING VELL (feet): 44	5		SAMPLE FLOW R		e: nL per minute): 300.0			BING TERIAL COD	E: New HDP			
	ONTAMINATIO			FIELD-FI	ILTERE		N) FII	LTER SIZE:			DUPLICATI		Y	(N)
		E CONTAINER		Tilliation	Lquipii		AMDLE DD	ESERVATION						
	SPEC	CIFICATION					TAMPLE PRI	ESERVATION	1		INTEN ANALYSIS			SAMPLING EQUIPMENT
SAMPLE ID CODE	CONTAIN		ERIAL V	/OLUME	PRE	ESERVATIVE USED		TAL VOL IN FIELD (mL)	1	FINAL pH	MET			CODE
32	2	Н	OPE 2	250 ml		Ice	!	None	S	ee above	PFAS QSM	Table B-15		PP
					<u> </u>								\bot	
			\longrightarrow										4	
					<u> </u>									
MATERIAL (TD 47.1 ft to To	AG = Amber	Glass: C	G = Clear	r Glass	. PF = Po	lyethylene;	PP = Polyp	ronyl	ene: S = S	Silicone; T =	: Teflon;	O = Oti	her (Specify)
SAMPLING/ EQUIPMENT	PURGING A	APP = After Pe	eristaltic Pun	mp;	B = Bai	iler; BP	= Bladder P		P = E	Electric Subm	nersible Pump Vacuum Trap	; PP	= Perista	altic Pump (Specify)

SITE NAME: For	rmal Central Hea	at Plant (CHE))				ITE OCATION:	Kennedy Sp	pace Cer	nter (KSC)	Florida			
	ID: MW0033	SAN	IPLE ID:			-035.0-20211000 of screen (feet b	6				DATE:	10/28/2	021	
		San	ipie deptiri	(uuu.u)-	-[DOLLOIII		RGING DAT		III OI SCIE	een (leet L	115)			
STATIC DE	EPTH R (feet btoc): 5.9		SING HEIG tals): -0.2	HT		DEPTH TO WA	ATER (feet b	ols) = DTW	WE	ELL SCRE	EN INTERVAL	. DEPTH	(feet bls): 32.5 to 37.5
WELL DIAMETER	(inches): 1	TUBING DIAMETER	R (inches):	3/16		E PUMP TYPE ILER: Peristaltion	Pump	TOP DEPTH			or depth to wates):	er		OM DEPTH ls): 37.5
WELL VOL		1 WELL VO	LUME = (TOTAL		EPTH - STAT		,	X WE	ELL CAPA	CITY		•	
EQUIPMEN	IT VOLUME PU	RGE: 1 EQI	JIPMENT \	/OL. =	4.74 PUMP V	OLUME + (TUB	(14.5 – 5.05 ING CAPAC	,	TUBING	G I FNGTI	H) + FLOW CE	II VOLU	MF	
	if applicable)				0.73	Liters.					,			
	MP OR TUBING				OR TUBI		PURGE START	:. ED:. 1010		PURGING ENDED AT	: 1029	TOTAL PURGE		1E rs): 4.18
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PUR RA ⁻ (mlp	ΓΕ	DEPTH TO WATER (feet)	pH (etandard	TEMP.	COND. (μS/cm)	OX.	OLVED YGEN ng/L)	TURBIDITY (NTUs)	_	RP nV)	COLOR (describe)
1015	1.10	1.10	220	0.0	5.95	6.83	27.4	2753.0	0	.26	4.10	-:	5.0	Clear
1020	1.10	2.20	220	0.0	5.95	6.85	27.5	2755.0	0).11	2.85	3	3.0	٧
1025	1.10	3.30	220	0.0	5.95	6.84	27.4	2745.0	0).10	1.81	3	3.4	
1029	0.88	4.18	220	0.0	5.95	6.85	27.5	2743.0	0	.08	1.95	5	5.0	Clear
1030	Samples	Collected	I											
	ACITY (Liters P		0.75" = 0.0 s/Ft.): 1/8 '		1" = 0.1 02: 3/1		.23; 2 " = 1/4" = 0.009		1.40; 0.015:	4" = 2.46 3/8" = 0		6 " = 0.038;	5.57; 5/8"	12" = 22.26 = 0.06
SAMPLING		(=	,.					-,						
	BY (PRINT) / AF gel/Tetra Tech	FILIATION:		SAM	IPLER(S	s) SIGNATURES	:		SAMPL		1000	SAMP		10.10
					_				INITIA	TED AT: 1	1030	ENDE	D AT: 1	1040
PUMP OR T	TUBING WELL (feet): 35	5.0			IPLE PU W RATE	MP: (mL per minute): 220.0		TUBIN	G RIAL COD	E: HDPE			
	CONTAMINATIO		N	FIEL	D-FILTE			LTER SIZE:			DUPLICATE	: Y		(N)
		E CONTAINE	R	1			SAMPLE PR	ESERVATION						
	SPE	CIFICATION									INTENI ANALYSIS			SAMPLING EQUIPMENT
SAMPLE I CODE	D # CONTAIN		TERIAL	VOLU	IME F	PRESERVATIVE USED		TAL VOL IN FIELD (mL)		INAL pH	METH	OD		CODE
9	2	F	IDPE	250	ml	Ice		None	See	above	PFAS QSM T	able B-15		PP
REMARKS. MATERIAL	. TD 37.5 ft to T	OC AG = Ambe	er Glass.	CG = C	Clear Gla	988. PF = Do	lyethylene;	PP = Polyp	ronvlene	a· S = 9	ilicone; T = 1	Teflon;	O = Oti	her (Specify)
		APP = After F					= Bladder F			-	ersible Pump;			altic Pump
		RFPP = Reve						ubing Gravity			Vacuum Trap;			(Specify)

SITE NAME: Forn	nal Central Hea	at Plant (CHP)					ITE OCATION:	Kennedy Sp	oace (Center (KSC)), Florida			
LOCATION I		SAMF				4.4-20211028	3	th] x 0.5-bottor			DAT	TE: 10/28	/2021	
OTATIO DES			UO LIEIOLIT		TIO D		GING DAT			WELL CODE	· EN INITED	(AL DEDT		\ 0.1 0.0 1 0.0 0.0
STATIC DEF	(feet btoc): 5.6		NG HEIGHT als):			EPTH TO WA asing Height (f		ois) = DTVV		WELL SCRE	EN INTERV	/AL DEPTI	H (feet bis	s):21.90 to 26.90
WELL DIAMETER ((inches): 1	TUBING DIAMETER ((inches): 3/1			UMP TYPE R: Peristaltic	: Pump	TOP DEPTH which ever is		op of screen o atest (feet bls		vater		OM DEPTH ols): 26.90
(only fill out it	JME PURGE: f applicable)	1 WELL VOLU	JME = (TO				IC DEPTH	TO WATER)	ΧV	WELL CAPA	CITY			
EQUIPMENT	T VOLUME PUI	RGE: 1 EQUI	PMENT VO	1.3 L. = PUM		Liters.	NG CAPAC	ITY X	TUB	ING LENGTI	H) + FI OW	CELL VOL	UMF	
(only fill out it					0.63	Liters.			.02		.,	0222 702		
	MP OR TUBING		FINAL PU				PURGE			PURGING			AL VOLUN	
DEPTH IN W	VELL (feet): 24	.4 CUMUL.	DEPTH IN		eet): 24 PTH	4.4	START	ED:. 1055		ENDED AT	1114	PURG	GED (Lite	rs): 5.7 T
TIME	VOLUME PURGED (Liters)	VOLUME PURGED (Liters)	PURGE RATE (mlpm)	E T	O TER eet)	pH (standard units)	TEMP. (°C)	COND. (μS/cm)		SSOLVED DXYGEN (mg/L)	TURBIDI (NTUs		ORP (mV)	COLOR (describe)
1100	1.50	1.50	300.0	5.	.90	6.60	28.5	3097.0		0.13	4.05		-34.5	Clear
1105	1.5	3.0	300.0	5.	.90	6.60	28.4	3092.0		0.08	1.60		-32.8	ţ
1110	1.5	4.5	300.0	5.	.90	6.60	28.5	3087.0		0.07	2.32		-31.0	\
1114	1.2	5.7	300.0	5.	.90	6.60	28.5	3088.0		0.06	2.17		-30.0	Clear
1115	Samples	Collected												
		<u> </u>												
WELL CAR	ACITY (Liters Po	or Footh.	. 75" = 0.076	2. 4" -	= 0.15;	1.25 " = 0	22. 2" -	= 0.61; 3" =	1.40;	; 4 " = 2.46	6; 5 " = 3.	06: 6"	= 5.57;	12 " = 22.26
TUBING INS	SIDE DÌA. CAPA							8; 5/16" = 0				.00; 6 " / 2" = 0.038		' = 0.06
SAMPLING	DATA BY (PRINT) / AF	FILIATION:		SAMPLE	R(S) S	IGNATURES		1						
Robert Siege		TIEI/(TIOI)		O/ WIT EE!	<u> </u>	ION/TORLES				MPLING TIATED AT:	1115		MPLING DED AT:	1125
PUMP OR T	UBING VELL (feet): 24.	4		SAMPLE		o: nL per minute	۸.			BING FERIAL COD	E. Now U			
	ONTAMINATIOI			FIELD-FII	LTERE	D: Y (N		LTER SIZE:			DUPLICA		Υ	(N)
		E CONTAINER		Filtration	Equipn	ment Type:							<u> </u>	(' ')
		CIFICATION	<u> </u>			S	AMPLE PR	ESERVATION				ENDED		SAMPLING
SAMPLE ID CODE	CONTAIN		ERIAL V	OLUME	PRE	ESERVATIVE USED		TAL VOL IN FIELD (mL)	,	FINAL pH		SIS AND/O ETHOD	R	EQUIPMENT CODE
34	2	НС	DPE 2	250 ml		Ice		None	S	ee above	PFAS QS	SM Table B-1	15	PP
MATERIAL (TD 14.5 ft to To	OC AG = Amber	Glass: Co	G = Clear	Glass	. PE = Po	lyethylene;	PP = Polyp	ropyle	ene: S = S	ilicone; T	= Teflon;	O = Of	ther (Specify)
SAMPLING/	PURGING A	APP = After Pe RFPP = Revers	eristaltic Pum	np; E	B = Bai	iler; BP	= Bladder P		P = E	Electric Subm		np; PF	P = Perista	altic Pump (Specify)

SITE			.,				SITE								
NAME: For	mer Central He	,				•	_OCATION:	Kennedy Sp	oace Ce	nter (KSC)), Florida				
LOCATION	ID: MW0035					of screen (feet			m of scr	een (feet b		10/28/2	:021		
STATIC DE TO WATER	PTH (feet btoc): 4.4		ING HEIGI als):	HT		DEPTH TO W Casing Height	ATER (feet b		WI	ELL SCRE	EN INTERVAL	DEPTH	(feet bls): 2.35 1	to 12.35
WELL DIAMETER	(inches): 1	TUBING DIAMETER	(inches):	3/16		: PUMP TYPE LER: Peristalti	c Pump	TOP DEPTH			or depth to wate	er		OM DEP	
WELL VOL	UME PURGE: if applicable)		LUME = (T	TOTAL	WELL DI								,		
FOLIDMEN	IT VOLUME PU	PGE: 1 EOI	7.89 ft 1			OLUME + /TUE		14.5 – 5.05) x		G I ENGTI	H) + FLOW CE	II VOII	IME		
	if applicable)	NOL. ILW	,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		0.63	`)		TOBIIV	O LLIVOIT	1) . 1 2000 02	LL VOLC	/IVIL		
	MP OR TUBINO				OR TUBI		PURGE			PURGING			VOLUM		
DEPTHIN	NELL (feet): 8.	CUMUL.	DEPTH	IN WE	LL (feet): DEPTH		START	ED:. 0920	1	ENDED AT	: 0944	PURGI	ED (Liter	s): 9.36	<u></u>
TIME	VOLUME PURGED (Liters)	VOLUME PURGED (Liters)	PUR RAT (mlp	ΓE	TO WATER (feet)	pH (standard	TEMP. (°C)	COND. (μS/cm)	OX	SOLVED YGEN ng/L)	TURBIDITY (NTUs)		DRP mV)		DLOR scribe)
0925	3.40	3.40	340	.0	5.85	6.48	27.9	578.0	C).29	1.0	;	3.5	С	lear
0930	1.70	5.10	550	.0	5.85	6.47	28.1	613.0	C).37	4.8	-	6.5	1	Í
0935	1.70	6.80	550	.0	5.85	6.47	28.0	612.0	C).35	1.83	-	9.2		
0940	1.70	8.50	550	.0	5.85	6.47	28.1	613.0	C).37	1.44	-1	11.5		1
0944	1.36	9.36	550	.0	5.85	6.47	28.0	615.0	C).33	0.71	-1	15.5	C	lear
0945	Samples	Collected	ı												
	ACITY (Liters F SIDE DIA. CAP		0.75" = 0.0 s/Ft.): 1/8 "		1" = 0.1		0.23; 2 " = 1/4" = 0.009		1.40; 0.015:	4" = 2.46 3/8" = 0		6 " = 0.038;	5.57; 5/8"	12 " = = 0.06	22.26
SAMPLING	DATA	·	,		·			-,	,		/				
	BY (PRINT) / Al el/Tetra Tech	FFILIATION:		SAN	MPLER(S)	SIGNATURES	S:	_	SAMPI INITIA	LING TED AT: (0945		PLING ED AT: ()955	
PUMP OR					IPLE PUI				TUBIN						
	NELL (feet): 8.		N			(mL per minute RED: Y		LTER SIZE:	MATEI μm		E: NEW HDPE		,	(A1)	
FIELD DEC	ONTAMINATIO	E CONTAINE		Filtra	ation Equ	ipment Type: _					DUPLICATE	: \	<u>'</u>	(N)	
		CIFICATION	.rx				SAMPLE PR	ESERVATION			INTENI	DED		SAMPL	
SAMPLE II CODE	D # CONTAIN		TERIAL	VOLU	JME P	RESERVATIV USED		TAL VOL IN FIELD (mL)		INAL pH	ANALYSIS METH		E	EQUIPM CODI	
35	2	F	IDPE	250	ml	Ice		None	See	above	PFAS QSM T	able B-15		PP	
	TD 12.35 ft to		or Class:	CC -	Class Cl-	00: DE - D	alvothyd an a	DD - Dal:	ronder	o: c - 0	ilioono: T = 3	Toflor:	0 - 04	hor /9	oifu)
SAMPLING		AG = Ambe			Clear Gla		olyethylene; P = Bladder P	PP = Polyp		-	ilicone; T = 1	Γeflon; PP :	Perista	her (Spe	
EQUIPMEN		RFP = Alter F RFPP = Reve						Tubing Gravity			Vacuum Trap;		= Other		

SITE NAME: Forme	r Central Hea	at Plant (CHP)					ITE OCATION:	Kennedy Sp	ace (Center (KSC)), Florid	а			
LOCATION ID:	MW0063						ols)-Top dep	oth] x 0.5-botton	n of s	screen (feet b	ols)	DATE:	10/29/2	2021	
STATIC DEPT		CASI	NG HEIGHT	г ѕт.	ATIC D	PUF EPTH TO WA	ATER (feet b			WELL SCRE	EN INT	TERVAL	DEPTH	(feet bls	s): 40 to 50
TO WATER (fe		_	als): NA			sing Height (•	,						(,,
WELL DIAMETER (in	oboo): 1	TUBING DIAMETER	(inches): 2/			UMP TYPE R: Peristaltion	Dumn	TOP DEPTH which ever is		•		to wate	r		OM DEPTH
WELL VOLUM	IE PURGE:													(leet b	ls): 50
(only fill out if a	pplicable)					Liters.									
EQUIPMENT V		RGE: 1 EQU	PMENT VO	L. = PUN	IP VOL	UME + (TUB	ING CAPAC	ITY X	TUB	ING LENGTI	H) + FL	OW CEL	L VOLU	JME	
(Offig fill out if a	ррпсаые)			0	.78	Liters. (0	0.005 x 60) +	0.475 = 0.78							
INITIAL PUMP			FINAL PU				PURGI			PURGING				VOLUN	
DEPTH IN WE	LL (feet): 45	CUMUL.	DEPTH IN		PTH		INITIAT	ED AT: 1410		ENDED AT	: 1440	1	PURG	ED (Liter	rs): 7.5
	VOLUME PURGED (Liters)	VOLUME PURGED (Liters)	PURGE RATE (mlpm)	WA	ΓΟ ATER eet)	pH (standard units)	TEMP. (°C)	COND. (μS/cm)		SSOLVED DXYGEN (mg/L)		RBIDITY ITUs)		DRP (mV)	COLOR (describe)
1420	2.5	2.5	250	2	.91	7.06	27.37	749.62		0.07	6	6.45	-(69.2	Clear
1430	2.5	5.0	250	2	.91	7.09	27.32	746.50		0.04	(3)	3.86	-	73.5	Clear
1440	2.5	7.5	250	2	.91	7.08	27.33	746.85		0.03	4	4.01	-	73.4	Clear
1445	Sample	Collected													
													1		
WELL CAPAC TUBING INSID).75" = 0.076 /Ft.): 1/8" =		= 0.15; 3/16"		1.23; 2 " = 1/4" = 0.009	= 0.61;		,			6" = : 0.038	= 5.57; 5/8"	12 " = 22.26 = 0.06
SAMPLING DA		THE LATION.		CAMPLE	'D/C\ C	IONATION		/					1		
SAMPLED BY Chuck Sorden/		FILIATION:		SAMPLE	K(S) S	IGNATI RES				MPLING TIATED AT:	1445			PLING ED AT:	1450
				<u>_</u>							1440		LIVE		1400
PUMP OR TUE DEPTH IN WE				SAMPLE FLOW R		o: nL per minute): 200			BING TERIAL COD	E: HDI	PE			
FIELD DECON	OITANIMATI	N: (Y) 1		FIELD-F Filtration		ED: Y (I	N) FI	LTER SIZE: _		μm	DUPI	LICATE:	,	Y	(N)
		E CONTAINER	l .				SAMPLE PR	ESERVATION							
	SPEC	CIFICATION					1	LOLIVITION	l		ANA	INTENE ALYSIS A			SAMPLING EQUIPMENT
SAMPLE ID CODE	# CONTAIN		TERIAL V	/OLUME	PRE	ESERVATIVE USED		TAL VOL IN FIELD (mL)		FINAL pH	7.1.0	METHO			CODE
1	3	(CG	40 ml		HCI		None		<2	S۱	N-846 8	3260B		PP
	<u> </u>														
	<u> </u>														
DEMARKS	1	. 19													
REMARKS: In	ıtıal high turbi	aity.													
MATERIAL CO		AG = Amber		G = Clea			lyethylene;	PP = Polypi			ilicone;		eflon;		her (Specify)
SAMPLING/PU EQUIPMENT (\PP = After Pe RFPP = Revers			B = Ba mp;		= Bladder P w Method (1	Pump; ES l Fubing Gravity I		Electric Subm n); VT =		Pump; m Trap;			altic Pump (Specify)

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Tetra Tech, Inc.

BORING LOG

Page (Dof(i)

					N	g\'{c> ⁄/ATE	RIAL DESCRIPTION	Ι		PID/FI	D Rea	ding (p
<u>ا</u> ,	mple Depth No. (Ft.) and Type	Blows/ 6' or RQD (%)	Sample Recovery / Sample Length	or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	CI)	Zo sa olle s	-00:00p
	<u> </u>	I			Lerc,f	D.	&ro-t"f #		6-'ţ; C			
_	31	/		<u> </u> 	f;	Q	J.r		1	+		\dashv
		/			- 1	rcci	$\Gamma imes \Pi$			+		
-		/						48	,	+		
	Ų,		,									
		/							74.			
	_								_	+		
	$ \downarrow$ V	1			- <i>l'i'</i>	I (c) W:K 3., 1 1A (V	arJ		+		\dashv
-		I/		1 20	$-\iota \iota$		C) W:K 3;1 JA (V	10		_		\dashv
		/		<u> </u>								
		•/			-/\\-	v'l	b, lt w-fl doo	ļa	14 J: to			
		/		t'f	1	t-O-'/	1 A	1		1	Н	
_	-A	/			G-rG	KI -	<u>' (,r; Uf Br≪N"' -A</u>	拦	CJ5		-	_
		/		1.10	- 1	10v f	I _{AJ} Sh(/	,.,μ	Wrn.,		Н	\dashv
		/		LIB		(V)	_ A Sru/	1	1-L-0S fly /J-	vi'	П	
						$P_{","}$	d" [< A J	12	I)		
L	, v	<u> </u>		•	_		1 -	_		_	_	_
L	/\	/			C-1	f' V 7	21 rt;-"-t "i'r V		- tle > Jr		Н	4
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PROJECT NAME:

BORING LOG

BORING No.:

PFAS

NASA



FSI - SB0001

			MUN			60923	7	DATE:	от.	12/10/20		- 00		
			RIG:	PANY:		Junter	Prote	GEOLOGIS DRILLER:	51:	Dave Long		sers		
	DIVIL	I	1110.	ı	9.00			RIAL DESCRIPTION	1			D Read	ding (ı	nnm)
	Sample No. and Type or RQD	(Ft.)	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color		U S C S *	Remarks	Sample	Sampler BZ	Borehole**	Driller BZ**
		3	\angle			As	al	ove, gray f	500	ids with				
			/			S	lells	(niver to trea	2)	weth				-
			//				rac	resing shells wi	th	denth.				
30-	. 44	No.	Z		L2									
30	D	1	/			<u> </u>			- a					
					. No.									S. T
					31		1			. 987				
		(4)	/			VQ	Y	loose gray fo	- Ca	dy shells	7		\dashv	
)				~	Mos	thy shills with	9	sads				\dashv
							She	Ils crushed 62	na	1, SAR 72"				\exists
			\mathbb{Z}											
40 -		4	/			(\dashv
			//		L3	43	s/ N	lostly gray self	W	Ishells (minor			+	\dashv
			$ \angle $		/	5	ans		61	Telegr?	_			
			\angle			N.	2-3	" (non silts t	ha	clays			_	4
		0	//		o."	San	tus	if to setty son	1	and Sud			\dashv	\dashv
					47		~1	1 colt as (20-3	9	2(1) 20(0)				
			/			A Sold	3	Dorson Go	4	Sondy				
			$/\!\!\!/$			5	Col	1 clay with	hu .	ior shells		\vdash	_	\dashv
50 -	* Wher	rock co	oring, ente	er rock bro	keness.	Camer C	(7)	clay, more 8.		1 02 6				
		de mon) borehole. I	ncrease	reading frequency if elevated reponse re	ead.	Drillin Background			6	
				11			7.3	V						_
	Conv	/erted	to We	H:	Yes		1	No X Well I.D).#:					

化	Tetra Tech, Inc.

BORING LOG



	1 ^				nbe Ci	IATE	AL DESCRIPTION	1		PID/FII	D Read	dina (
Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Change	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	Sample		Borehole**
	1			14	Gar	cla	dy silfy clai	_	o shells			
7	6		G	53) on	10	Ille (= 1 ma)	in	and crashed			
				L5?	- (sed lea	((less 5 (tb)	5h				
	1			60		18	endy shells in					
					Shilly	Sen	helly clayey	50	ads to			
	9			L6?	1/65	no	ells 63-65 (clays lly less cla	12	v 41.			
					7	y fi	7	le	solt will			
	1				С	lat						
					E	0						
* Wher	rock co	oring, ente	er rock bro	keness.								



_		Fire Station Nu	mber 1 (FS1)				-	FS1-DPT0001	
ļ	Project No.:					_	Location:		
	Date:	02/14/2022				S	Sampled By:	Chuck Sorden	
				DDT 04	MDUNG	NATA			
LOCAT	FION ID	LOCATION	DATE		MPLING I		001.00	601	ANACNITO
LOCAT FS1-DF		LOCATION 17	DATE 02/14/2022	TIME 1010	DEPTH 5'	ODOR	COLOR Brown	CON	MENTS
FS1-DF		17	02/14/2022	1030	12'	Organic	Brown		
FS1-DF		17	02/14/2022	1050	17'	Organic	1		
FS1-DF		17	02/14/2022	1115	25'	Organic	Brown		
FS1-DF		17	02/14/2022	1140	35'	None None	Gray		
FS1-DF		17	02/14/2022	1230	45'	None	Gray		
וט-וסו	-10001	17	02/14/2022	1230	45	None	Gray		
			CAMDI	E COLL	FOTION IN	FORMATI	ON.		
	Analusia				ECTION IN				Collected
DEA	Analysis		Preserv				r Requirem		
PFA	AS QSM Tab	ie B-15	Non	9		2 250ML	HDPE Bottl	es	X
				DOEDV	ATIONS /	NOTES			
A11: 1									
		imum of five (5)	screen volume	es (1.5 L)	prior to sam	ipie collectio	n.		
_	five feet to cl								
		pressure groutin	-	-					
Rig, Rods, a	nd associate	d tooling decon'd	d with pressuri	zed steam	1				
0:-1 ::									
	Applicable:	D.N					, .	,///	
MS/MSD	Duplicate II	ט No.:				/			



		Fire Station Nu	mber 1 (FS1)				_	FS1-DPT0002	
		112G09581 02/14/2022				c	Location:	15 Chuck Sorden	
	Date.	02/14/2022					oampieu by.	Chuck Soluen	
				DPT SA	MPLING I	DATA			
LOCAT	TON ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COM	IMENTS
FS1-DF		15	02/14/2022	1335	5'	Organic	Brown		
FS1-DF		15	02/14/2022	1400	12'	Organic	Brown		
FS1-DF		15	02/14/2022	1430	17'	Organic	Brown		
FS1-DF		15	02/14/2022	1500	25'	None	Gray		
	PT0002	15	02/14/2022	1525	35'	None	Gray		
FS1-DF	PT0002	15	02/14/2022	1555	45'	None	Gray		
			SAMPL	E COLL	ECTION IN	IFORMATI	ON.		
	Analysis	5	Preserv	ative		Containe	r Requireme	ents	Collected
PFA	Analysis		Preserv Non-				r Requireme . HDPE Bottle		Collected X
PFA									
PFA									
PFA									
PFA									
PFA			Non	e	ATIONS	2 250mL			
	S QSM Tab	le B-15	Non	e DBSERV	ATIONS / I	2 250mL	HDPE Bottle		
ll intervals _l	S QSM Tab	le B-15	Non	e DBSERV		2 250mL	HDPE Bottle		
ll intervals _l	ourged a mir	nimum of five (5)	None	DBSERV es (1.5 L)		2 250mL	HDPE Bottle		
II intervals and auger orehole aba	ourged a mir five feet to cl	nimum of five (5) lear utilities pressure groutin	None Screen volume g through bori	DBSERV es (1.5 L)	prior to sam	2 250mL	HDPE Bottle		
II intervals and auger orehole aba	ourged a mir five feet to cl	nimum of five (5)	None Screen volume g through bori	DBSERV es (1.5 L)	prior to sam	2 250mL	HDPE Bottle		
ll intervals and auger orehole aba	ourged a mir five feet to cl	nimum of five (5) lear utilities pressure groutin	None Screen volume g through bori	DBSERV es (1.5 L)	prior to sam	2 250mL	HDPE Bottle		
l intervals i and auger prehole aba	ourged a mir five feet to cl	nimum of five (5) lear utilities pressure groutin	None Screen volume g through bori	DBSERV es (1.5 L)	prior to sam	2 250mL	HDPE Bottle		
I intervals and auger orehole aba	ourged a mir five feet to cl	nimum of five (5) lear utilities pressure groutin	None Screen volume g through bori	DBSERV es (1.5 L)	prior to sam	2 250mL	HDPE Bottle		
l intervals i and auger prehole aba g, Rods, a	ourged a mir five feet to cl	nimum of five (5) lear utilities pressure groutin	None Screen volume g through bori	DBSERV es (1.5 L)	prior to sam	2 250mL NOTES ple collectio	n.	es	
ll intervals and auger orehole aba ig, Rods, a	ourged a min five feet to cl andoned via and associate Applicable:	nimum of five (5) lear utilities pressure groutin	None Screen volume g through borid with pressuri	DBSERV es (1.5 L) ng rods zed steam	prior to sam	2 250mL NOTES ple collectio	HDPE Bottle	es	



Project	: Site Name:	Fire Station Nu	mber 1 (FS1)				Sample ID:	FS1-DPT0003	
	Project No.:		()				Location:		
		02/15/2022				S	Sampled By:	Chuck Sorden	
				DPT SA	MPLING I	ΔΤΔ			
LOCA1	TION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COM	MENTS
	PT0003	18	02/15/2022	0720	5'	Organic	Brown		
FS1-DI	PT0003	18	02/15/2022	0740	12'	None	Gray		
FS1-DI	PT0003	18	02/15/2022	0800	17'	None	Gray		
FS1-DI	PT0003	18	02/15/2022	0825	25'	None	Gray		
FS1-DI	PT0003	18	02/15/2022	0855	35'	None	Gray		
FS1-DI	PT0003	18	02/15/2022	0925	45'	None	Gray		
							,		
			SAMDI	E COLL	ECTION IN	IFORMATI	ON.		
	Analysis		Preserv		LOTION		r Requireme	onte	Collected
DEA	Analysis AS QSM Tab		Non				HDPE Bottle		X
FFF	AS QSIVI TAD	ie D-15	NOII	U		2 250IIIL	HDPE BOUIL	; 5	^
					1710NO /				
					ATIONS /				
		nimum of five (5)	screen volum	es (1.5 L)	prior to sam	ple collection	n.		
-	five feet to cl								
		pressure groutin							
Rig, Rods, a	nd associate	d tooling decon'd	d with pressuri	zed steam	l				
	Applicable:						_	_ / /	
MS/MSD	Duplicate II	D No.:					////		
Yes	FS1-FD-202	220215-01 - DUF	of DPT0003-	017.0					



		Fire Station Nu	mber 1 (FS1)					FS1-DPT0004	
	Project No.:						Location:		
	Date:	02/15/2022				3	sampled By:	Chuck Sorden	
				DPT SA	MPLING I)ATA			
LOCA	ΓΙΟΝ ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COM	MENTS
	PT0004	19	02/15/2022	1035	5'	Organic	Brown		-
FS1-DI	PT0004	19	02/15/2022	1055	12'	Organic	Brown		
FS1-DI	PT0004	19	02/15/2022	1115	17'	Organic	Brown		
FS1-DI	PT0004	19	02/15/2022	1140	25'	None	Gray		
FS1-DI	PT0004	19	02/15/2022	1205	35'	None	Gray		
FS1-DI	PT0004	19	02/15/2022	1230	45'	None	Gray		
					ECTION IN	IFORMATI(
	Analysis		Preserv	ative	ECTION IN	Containe	r Requireme		Collected
PF <i>I</i>	Analysis AS QSM Tab			ative	ECTION IN	Containe			Collected X
PFA			Preserv	ative	ECTION IN	Containe	r Requireme		
PFA			Preserv	ative	ECTION IN	Containe	r Requireme		
PFA			Preserv	ative	ECTION IN	Containe	r Requireme		
PFA			Preserv	ative	ECTION IN	Containe	r Requireme		
PFA			Preserv	ative	ECTION IN	Containe	r Requireme		
PF.			Preserv Non	ative e		Container 2 250mL	r Requireme		
	AS QSM Tab	le B-15	Preserv	ative e OBSERV	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals	AS QSM Tab	le B-15	Preserv	ative e OBSERV	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals Hand auger	purged a mir	nimum of five (5)	Preserv Non	observation (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals Hand auger Borehole ab	purged a min five feet to cl andoned via	nimum of five (5) lear utilities pressure groutin	Preserv Non screen volum g through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals Hand auger Borehole ab	purged a min five feet to cl andoned via	nimum of five (5)	Preserv Non screen volum g through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals Hand auger Borehole ab	purged a min five feet to cl andoned via	nimum of five (5) lear utilities pressure groutin	Preserv Non screen volum g through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals Hand auger Borehole ab	purged a min five feet to cl andoned via	nimum of five (5) lear utilities pressure groutin	Preserv Non screen volum g through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals Hand auger Borehole ab	purged a min five feet to cl andoned via	nimum of five (5) lear utilities pressure groutin	Preserv Non screen volum g through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals Hand auger Borehole ab	purged a min five feet to cl andoned via	nimum of five (5) lear utilities pressure groutin	Preserv Non screen volum g through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals Hand auger Borehole ab Rig, Rods, a	purged a min five feet to cl andoned via	nimum of five (5) lear utilities pressure groutined tooling decont	Preserv Non screen volum g through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals Hand auger Borehole ab Rig, Rods, a	purged a min five feet to cl andoned via and associate	nimum of five (5) lear utilities pressure groutin	Preserv Non screen volum g through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		
All intervals Hand auger Borehole ab Rig, Rods, a	purged a mir five feet to cl andoned via and associate	nimum of five (5) lear utilities pressure groutin	Preserv Non screen volum g through borid with pressuri	DBSERV es (1.5 L) ng rods zed steam	ATIONS / I	Containe 2 250mL	r Requireme HDPE Bottle		



		Fire Station Nu	mber 1 (FS1)					FS1-DPT0005	
	Project No.:	112G09581 02/15/2022				6	Location:		
	Date:	02/15/2022				3	ampied by:	Chuck Sorden	
				DPT SA	MPLING I	DATA			
LOCAT	TION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COM	IMENTS
FS1-DI	PT0005	20	02/15/2022	1335	5'	Organic	Brown		
FS1-DI	PT0005	20	02/15/2022	1355	12'	Organic	Brown		
FS1-DI	PT0005	20	02/15/2022	1415	17'	Organic	Brown		
	PT0005	20	02/15/2022	1435	25'	None	Gray		
FS1-DI	PT0005	20	02/15/2022	1500	35'	None	Gray		
FS1-DI	PT0005	20	02/15/2022	1530	45'	None	Gray		
			SAMPL	E COLL	ECTION IN	IFORMATI	ON	•	
	Analysis	3	Preserv	ative		Containe	r Requirem	ents	Collected
PF.	AS QSM Tab	le B-15	Non	9		2 250mL	HDPE Bottl	es	X
				SDOEDV	ATIONO	NOTEO			
All intervals		income of five (E)			ATIONS /		-		
	five feet to cl	nimum of five (5)	screen volume	es (1.5 L)	prior to sam	ipie collectio	11.		
-		ear unines pressure groutin	a through bori	na rode					
		d tooling decon'							
rily, rious, a	iliu associale	d tooling decorre	a with pressum	zeu sieaiii					
Circle if A	Applicable:								
Circle if A	Applicable:	D No.:							
	Duplicate II	D No.: 220215-03 - DUF	of FS1-DPT0	005-035.0)				



Dua!a=4	Cita Names	Fire Station No.	mbor 1 (FO1)				Comple ID:	ES1 DDT0006	
_	Project No.:	Fire Station Nu	iibei i (FSI)				Location:	FS1-DPT0006	
		02/16/2022							
	Date:	02/10/2022				3	ampieu by:	Chuck Sorden	
				DPT SA	MPLING I	DATA			
LOCAT	TION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COM	MENTS
FS1-DI	PT0006	21	02/16/2022	0810	5'	Organic	D. Brown		
FS1-DI	PT0006	21	02/16/2022	0830	12'	Organic	Brown		
FS1-DI	PT0006	21	02/16/2022	0850	17'	Organic	Brown		
FS1-DI	PT0006	21	02/16/2022	0915	25'	None	Gray		
FS1-DI	PT0006	21	02/16/2022	0940	35'	None	Gray		
	PT0006	21	02/16/2022	1010	45'	None	Gray		
					ECTION IN	IFORMATI			
	Analysis	3	Preserv	ative		Containe	r Requirem	ents	Collected
PF <i>A</i>	AS QSM Tab	le B-15	None	9		2 250mL	HDPE Bottl	es	X
			()BSERV	ATIONS /	NOTES			
All intervals	purged a min	imum of five (5)	screen volume	es (1.5 L)	orior to sam	ple collection	n.		
All intervals				(/)	!	•			
		ear utilities							
Hand auger	five feet to cl		a through bori	na rods					
Hand auger Borehole ab	five feet to cl andoned via	pressure groutin	-	-					
Hand auger Borehole ab	five feet to cl andoned via		-	-					
Hand auger Borehole ab	five feet to cl andoned via	pressure groutin	-	-					
Hand auger Borehole aba	five feet to cl andoned via	pressure groutin	-	-					
Hand auger Borehole aba	five feet to cl andoned via	pressure groutin	-	-					
Hand auger Borehole aba	five feet to cl andoned via	pressure groutin	-	-					
Hand auger Borehole ab: Rig, Rods, a	five feet to cl andoned via nd associate	pressure groutin	-	-					
Hand auger Borehole ab Rig, Rods, a	five feet to cl andoned via nd associate	pressure groutin d tooling decon'd	-	-					
Hand auger Borehole ab: Rig, Rods, a	five feet to cl andoned via nd associate	pressure groutin d tooling decon'd	-	-					
Hand auger Borehole ab Rig, Rods, a	five feet to cl andoned via nd associate	pressure groutin d tooling decon'd	-	-					



Project No.		mber 1 (FS1)				Location: 2	FS1-DPT0007	
	: 112G09581					_		
Date	: 02/16/2022				3	sampled By:	Chuck Sorden	
			DPT SA	MPLING I	DATA			
LOCATION ID	LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	COM	MENTS
FS1-DPT0007	22	02/16/2022	1120	5'	Organic	Brown		
FS1-DPT0007	22	02/16/2022	1140	12'	Organic	Brown		
FS1-DPT0007	22	02/16/2022	1200	17'	Organic	Brown		
FS1-DPT0007	22	02/16/2022	1225	25'	Organic	Brown		
FS1-DPT0007	22	02/16/2022	1250	35'	None	Gray		
FS1-DPT0007	22	02/16/2022	1315	45'	None	Gray		
Analysi	<u> </u>			ECTION IN			inte	Collected
Analysi		Preserv	ative	ECTION IN	Containe	r Requireme		Collected
Analysi PFAS QSM Tab			ative	ECTION IN	Containe			Collected X
		Preserv	ative	ECTION IN	Containe	r Requireme		
		Preserv	ative	ECTION IN	Containe	r Requireme		
		Preserv	ative	ECTION IN	Containe	r Requireme		
		Preserv	ative e		Containe 2 250mL	r Requireme		
PFAS QSM Tak	ole B-15	Preserv	ative e DBSERV	ATIONS /	Containe 2 250mL	r Requireme . HDPE Bottle		
PFAS QSM Tab	nimum of five (5)	Preserv	ative e DBSERV	ATIONS /	Containe 2 250mL	r Requireme . HDPE Bottle		
PFAS QSM Tab	nimum of five (5)	Preserv Non	observation (1.5 L)	ATIONS /	Containe 2 250mL	r Requireme . HDPE Bottle		
PFAS QSM Tak I intervals purged a mi and auger five feet to corehole abandoned via	nimum of five (5)	Preserv Non Screen voluming through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme . HDPE Bottle		
PFAS QSM Tab	nimum of five (5)	Preserv Non Screen voluming through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme . HDPE Bottle		
intervals purged a mi	nimum of five (5)	Preserv Non Screen voluming through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme . HDPE Bottle		
intervals purged a mind auger five feet to crehole abandoned via	nimum of five (5)	Preserv Non Screen voluming through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme . HDPE Bottle		
intervals purged a mind auger five feet to crehole abandoned via	nimum of five (5)	Preserv Non Screen voluming through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme . HDPE Bottle		
intervals purged a mind auger five feet to crehole abandoned via	nimum of five (5) clear utilities pressure groutined tooling decont	Preserv Non Screen voluming through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme . HDPE Bottle		
intervals purged a mind auger five feet to crehole abandoned via	nimum of five (5) clear utilities pressure groutin ed tooling decont	Preserv Non Screen voluming through bori	DBSERV es (1.5 L)	ATIONS / I	Containe 2 250mL	r Requireme . HDPE Bottle		



_		Fire Station Nu	mber 1 (FS1)				-	FS1-DPT0007	
	Project No.:						Location:		
	Date:	02/16/2022	And 02/17/202	22		S	Sampled By:	Chuck Sorden	
				DDT 0.4	MELINO	24.			
LOCAT	101110	LOCATION	DATE		MPLING I		001.00	201	AMENTO
LOCAT		LOCATION	DATE	TIME	DEPTH	ODOR	COLOR	CON	MENTS
	PT0007	23	02/16/2022	1445	5'	Organic	Brown		
FS1-DF		23	02/16/2022	1515	12'	Organic	Brown		
FS1-DF		23	02/16/2022	1545	17'	Organic	Brown		
FS1-DF		23	02/16/2022	1615	25'	None	Gray		
FS1-DF		23	02/17/2022	0720	35'	None	Gray		
FS1-DF	PT0007	23	02/17/2022	1500	45'	None	Gray		
					ECTION IN	FORMATION	2:0000000000000000000000000000000000000		
	Analysis		Preserv				r Requirem		Collected
PFA	S QSM Tabl	e B-15	None	e		2 250mL	HDPE Bottl	es	Х
			(DBSERV.	ATIONS /	NOTES			
All intervals i	purged a min	imum of five (5)	screen volume	es (1.5 L)	prior to sam	ple collection	n.		
	five feet to cl			, ,,	-	•			
_		pressure groutin	a through bori	na rods					
		d tooling decon'							
Nig, Nous, a	nu associate	u tooling decome	a with pressum	zeu sieaiii					
					-				
	pplicable:						_	_ / /	
MS/MSD	Duplicate II	O No.:				_			
							// /		
							•		

(CS)

(MR)

Geologist

Driller

Τt

GPI

Chuck Sorden

Mickey Ritter

Personnel:

	Weather:	Brandon Black-Godfrey Sunny – 46 degrees F	(BBG)	Tech	GPI
	PPE:	Level D			
		ety (HAS): Topics – PPE; SSF	HASP: IDW		
		tinue DPT GW Investigation			
	•	-			
0800:	CS on Base; Gath	ering Equipment/Supplies			
0815:	GPI @ badging; i	ssue with BBG.			
0900:	Issue resolved; T	t/GPI depart badging office	for site		
0910:	Tt/GPI arrive at F	S1; HAS Meeting; Daily Pre	ס		
0940:	Set up on FS1-DF	PT0001 (Location 17); hand ϕ	clear 5'		
	Drilling Commen				
	Sample Collected			(17)	Brown; Organic Odor
	Sample Collected			(17)	Brown; Organic Odor
	Sample Collected			(17)	Brown; Organic Odor
1115:	Sample Collected	fS1-DPT0001-025.0	0-20220214	(17)	Gray; No Odor
1140:	Sample Collected		0-20220214	(17)	Gray; No Odor
	-GPI Offsite for lu	ınch			
1200:	GPI On site				
	Sample Collected			(17)	Gray; No Odor
		essure Grouted 47' to surfac	e through rods		
	-	ooling Decon'd with steam			
	•	PT0002(Location 15); Hand (
	-	ced; No water observed in h			•
1335:	Sample Collected		0-20220214	(15)	Brown; Organic Odor
	-Very poor produ	_			
	Sample Collected			(15)	Brown; Organic Odor
	Sample Collected			(15)	Brown; Organic Odor
	Sample Collected			(15)	Gray; No Odor
1525:	Sample Collected		0-20220214	(15)	Gray; No Odor
	-Very poor produ				
	Sample Collected			(15)	Gray; No Odor
	•	essure grouted 47' to surfac	-		
	-	oling decon'd with steam; b	egin mobilizing	to Location 18	
1700:	Site secured; Tt/	GPI Offsite			

NO ALTERATION BEYOND 02/14/2022

@ 1700

(CS)

Chuck Sorden

Personnel:

Geologist

Τt

	Personnel:	Chuck Sorden	(CS)	Geologist	
		Mickey Ritter	(MR)	Driller	GPI
		Brandon Black-Godfrey	(BBG)	Tech	GPI
	Weather:	Sunny – 46 degrees F			
	PPE:	Level D			
	Health and Saf	ety (HAS): Topics – PPE; S	SHASP; IDW		
	Objective: Cor	ntinue DPT GW Investigation	on		
0630:	Tt/GPI on site; H	IAS Meeting; daily prep			
0645:	Set up on FS1-DI	PT0003 (Location 18); han	d clear 5'		
0700:	Drilling Commer	nced			
0705:	Sample Collecte	d FS1-FB-2022021	5-01		
	 Sample Collect 	ted in vicinity of sampling	area at Location 18	3	
0720:	Sample Collecte	d FS1-DPT0003-00	5.0-20220215	(18)	Brown; Organic Odor
0730:	Sample Collecte	d FS1-EB-2022021	5-01		
	- Sample Collect	ted by pouring PFAS Free v	vater over tubing		
0740:	Sample Collecte	d FS1-DPT0003-01	2.0-20220215	(18)	Gray; No Odor
0800:	Sample Collecte	d FS1-DPT0003-01	7.0-20220215	(18)	Gray; No Odor
0000:	Sample Collecte	d FS1-FD-2022021	5-01 – DUP of FS1-I	DPT0003-017.0)
0825:	Sample Collecte	d FS1-DPT0003-02	5.0-20220215	(18)	Gray; No Odor
0855:	Sample Collecte	d FS1-DPT0003-03	5.0-20220215	(18)	Gray; No Odor
	– MS/MSD Colle	cted			
	Sample Collecte			(18)	Gray; No Odor
		essure Grouted 47' to surf	ace through rods; i	mob to decon	
		ng Decon'd with steam			
1000:	Sample Collecte				
	•	ted by pouring PFAS free w		ear decon area	l
	•	PT0004 (Location 19); han	d clear 5'		
4045					
	Drilling Commer				
1035:	Sample Collecte	d FS1-DPT0004-00		(19)	Brown; Organic Odor
1035: 1055:	Sample Collecte	d FS1-DPT0004-00 d FS1-DPT0004-01	2.0-20220215	(19)	Brown; Organic Odor
1035: 1055: <mark>0000:</mark>	Sample Collecter Sample Collecter Sample Collecter	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021	2.0-20220215 <mark>5-02 – DUP of FS1-</mark> I	(19)	Brown; Organic Odor
1035: 1055: <mark>0000:</mark>	Sample Collecter Sample Collecter Sample Collecter Sample Collecter	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021	2.0-20220215 <mark>5-02 – DUP of FS1-</mark> 1 5-02	(19) DPT0004-012.0	Brown; Organic Odor
1035: 1055: 0000: 1110:	Sample Collecter Sample Collecter Sample Collecter Sample Collecter – Sample Collecter	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a	2.0-20220215 <mark>5-02 – DUP of FS1-</mark> 5-02 area at location 19	(19) DPT0004-012.0 near gas statio	Brown; Organic Odor n
1035: 1055: 0000: 1110: 1115:	Sample Collecter Sample Collecter Sample Collecter Sample Collecter Sample Collecter Sample Collecter	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a	2.0-20220215 <mark>5-02 – DUP of FS1-</mark> 5-02 area at location 19 7.0-20220215	(19) DPT0004-012.0 near gas statio (19)	Brown; Organic Odor n Brown; Organic Odor
1035: 1055: 0000: 1110: 1115: 1140:	Sample Collecter Sample Collecter Sample Collecter Sample Collecter Sample Collecter Sample Collecter Sample Collecter	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling of the samplin	2.0-20220215 5-02 – DUP of FS1-I 5-02 area at location 19 7.0-20220215 5.0-20220215	(19) DPT0004-012.0 near gas statio (19) (19)	Brown; Organic Odor n Brown; Organic Odor Gray; No Odor
1035: 1055: 0000: 1110: 1115: 1140:	Sample Collecter Sample Collecter Sample Collecter Sample Collecter Sample Collecter Sample Collecter Sample Collecter Sample Collecter	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a d FS1-DPT0004-01 d FS1-DPT0004-02 d FS1-DPT0004-03	2.0-20220215 5-02 – DUP of FS1-I 5-02 area at location 19 7.0-20220215 5.0-20220215	(19) DPT0004-012.0 near gas statio (19)	Brown; Organic Odor n Brown; Organic Odor
1035: 1055: 0000: 1110: 1115: 1140: 1205:	Sample Collecter Tollecter Sample Collecter Tollecter Sample Collecter Tollecter To	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a d FS1-DPT0004-01 d FS1-DPT0004-02 d FS1-DPT0004-03 ducing Formation	2.0-20220215 5-02 – DUP of FS1- 5-02 area at location 19 7.0-20220215 5.0-20220215 5.0-20220215	(19) DPT0004-012.0 near gas statio (19) (19) (19)	Brown; Organic Odor n Brown; Organic Odor Gray; No Odor Gray; No Odor
1035: 1055: 0000: 1110: 1115: 1140: 1205:	Sample Collecter	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a d FS1-DPT0004-01 d FS1-DPT0004-02 d FS1-DPT0004-03 ducing Formation d FS1-DPT0004-04	2.0-20220215 5-02 – DUP of FS1-1 5-02 area at location 19 7.0-20220215 5.0-20220215 5.0-20220215	(19) DPT0004-012.0 near gas statio (19) (19)	Brown; Organic Odor n Brown; Organic Odor Gray; No Odor
1035: 1055: 0000: 1110: 1115: 1140: 1205: 1230: 1245:	Sample Collecter FS1-DPT0004 Pro	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a d FS1-DPT0004-01 d FS1-DPT0004-02 d FS1-DPT0004-03 ducing Formation d FS1-DPT0004-04 essure grouted 47' to surfa	2.0-20220215 5-02 – DUP of FS1-1 5-02 area at location 19 7.0-20220215 5.0-20220215 5.0-20220215	(19) DPT0004-012.0 near gas statio (19) (19) (19)	Brown; Organic Odor n Brown; Organic Odor Gray; No Odor Gray; No Odor
1035: 1055: 0000: 1110: 1115: 1140: 1205: 1230: 1245: 1300:	Sample Collecter FS1-DPT0004 Pro Rods and tooling	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a d FS1-DPT0004-01 d FS1-DPT0004-02 d FS1-DPT0004-03 ducing Formation d FS1-DPT0004-04 essure grouted 47' to surfag decon'd with steam	2.0-20220215 5-02 – DUP of FS1-1 5-02 area at location 19 7.0-20220215 5.0-20220215 5.0-20220215 5.0-20220215 ace through rods	(19) DPT0004-012.0 near gas statio (19) (19) (19) (19)	Brown; Organic Odor n Brown; Organic Odor Gray; No Odor Gray; No Odor Gray; No Odor
1035: 1055: 0000: 1110: 1115: 1140: 1205: 1230: 1245: 1300: 1305:	Sample Collecter FS1-DPT0004 Pro Rods and tooling Set up on FS1-DI	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a d FS1-DPT0004-01 d FS1-DPT0004-02 d FS1-DPT0004-03 ducing Formation d FS1-DPT0004-04 essure grouted 47' to surfa g decon'd with steam PT0005 (Location 20); cori	2.0-20220215 5-02 – DUP of FS1-1 5-02 area at location 19 7.0-20220215 5.0-20220215 5.0-20220215 5.0-20220215 ace through rods	(19) DPT0004-012.0 near gas statio (19) (19) (19) (19)	Brown; Organic Odor n Brown; Organic Odor Gray; No Odor Gray; No Odor Gray; No Odor
1035: 1055: 0000: 1110: 1115: 1140: 1205: 1230: 1245: 1300: 1305: 1315:	Sample Collecter FS1-DPT0004 Pro Rods and tooling Set up on FS1-DI Drilling Commer	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a d FS1-DPT0004-01 d FS1-DPT0004-02 d FS1-DPT0004-03 ducing Formation d FS1-DPT0004-04 essure grouted 47' to surfa g decon'd with steam PT0005 (Location 20); corinced	2.0-20220215 5-02 – DUP of FS1-1 5-02 area at location 19 7.0-20220215 5.0-20220215 5.0-20220215 5.0-20220215 ace through rods	(19) DPT0004-012.0 near gas statio (19) (19) (19) (19) and hand clear	Brown; Organic Odor n Brown; Organic Odor Gray; No Odor Gray; No Odor Gray; No Odor
1035: 1055: 0000: 1110: 1115: 1140: 1205: 1230: 1245: 1300: 1305: 1315: 1335:	Sample Collecter FS1-DPT0004 Pro Rods and tooling Set up on FS1-DI Drilling Commer Sample Collecter	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a d FS1-DPT0004-01 d FS1-DPT0004-02 d FS1-DPT0004-03 ducing Formation d FS1-DPT0004-04 essure grouted 47' to surfa g decon'd with steam PT0005 (Location 20); corinced d FS1-DPT0005-00	2.0-20220215 5-02 — DUP of FS1-1 5-02 area at location 19 7.0-20220215 5.0-20220215 5.0-20220215 ace through rods ng through asphalt 5.0-20220215	(19) DPT0004-012.0 near gas statio (19) (19) (19) (19) and hand clear	Brown; Organic Odor n Brown; Organic Odor Gray; No Odor Gray; No Odor Gray; No Odor Gray; No Odor
1035: 1055: 0000: 1110: 1115: 1140: 1205: 1230: 1245: 1300: 1305: 1315: 1335: 1355:	Sample Collecter Test of the collecter FS1-DPT0004 Pro Rods and tooling Set up on FS1-Di Drilling Commer Sample Collecter Sample Collecter Sample Collecter	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a d FS1-DPT0004-01 d FS1-DPT0004-03 ducing Formation d FS1-DPT0004-04 essure grouted 47' to surfa g decon'd with steam PT0005 (Location 20); corinced d FS1-DPT0005-00 d FS1-DPT0005-01	2.0-20220215 5-02 — DUP of FS1-1 5-02 area at location 19 7.0-20220215 5.0-20220215 5.0-20220215 ace through rods ng through asphalt 5.0-20220215 2.0-20220215	(19) DPT0004-012.0 near gas statio (19) (19) (19) (19) and hand clear (20) (20)	Brown; Organic Odor n Brown; Organic Odor Gray; No Odor Gray; No Odor Gray; No Odor Frown; Organic Odor Brown; Organic Odor
1035: 1055: 0000: 1110: 1115: 1140: 1205: 1230: 1245: 1300: 1305: 1315: 1335: 1355:	Sample Collecter FS1-DPT0004 Pro Rods and tooling Set up on FS1-DI Drilling Commer Sample Collecter	d FS1-DPT0004-00 d FS1-DPT0004-01 d FS1-FD-2022021 d FS1-FB-2022021 ted in vicinity of sampling a d FS1-DPT0004-01 d FS1-DPT0004-03 ducing Formation d FS1-DPT0004-04 essure grouted 47' to surfa g decon'd with steam PT0005 (Location 20); corinced d FS1-DPT0005-00 d FS1-DPT0005-01	2.0-20220215 5-02 — DUP of FS1-1 5-02 area at location 19 7.0-20220215 5.0-20220215 5.0-20220215 ace through rods ng through asphalt 5.0-20220215 2.0-20220215	(19) DPT0004-012.0 near gas statio (19) (19) (19) (19) and hand clear	Brown; Organic Odor n Brown; Organic Odor Gray; No Odor Gray; No Odor Gray; No Odor Gray; No Odor

1435: Sample Collected	FS1-DPT0005-025.0-20220215	(20)	Gray; No Odor
1500: Sample Collected	FS1-DPT0005-035.0-20220215	(20)	Gray; No Odor
0000: Sample Collected	FS1-FD-20220215-03 – DUP of FS1-I	DPT0005-035.0	
1530: Sample Collected	FS1-DPT0005-045.0-20220215	(20)	Gray; No Odor

1540: Sample Collected FS1-EB-20220215-03

Sample Collected by pouring PFAS free water over sample tubing

1600: FS1-DPT0005 pressure grouted 47' to surface through rods

1620: Rods and tooling decon'd with steam

1645: Site secure; Tt/GPI offsite

NO ALTERATION BEYOND 02/15/2022 @ 1645

02/16/2022		FS1		112G09581
Personnel: Weather:	Chuck Sorden Mickey Ritter Brandon Black-Godfrey Sunny – 58 degrees F	(CS) (MR) (BBG)	Geologist Driller Tech	Tt GPI GPI
PPE:	Level D			
	fety (HAS): Topics – PPE; ntinue DPT GW Investigat			
	BBG at badging getting BB	G fingerprints		
0715: GPI on site; HAS				
·	PT0006 (Location 21); ha	nd clear 5'		
0750: Drilling Commer		05.0.20220246	(24)	Daniero Orașii o Odere
0810: Sample Collecte			(21)	Brown; Organic Odor
0830: Sample Collecte			(21)	Brown; Organic Odor
0850: Sample Collecte 0915: Sample Collecte			(21) (21)	Brown; Organic Odor Gray; No Odor
0940: Sample Collecte			(21)	Gray; No Odor
1010: Sample Collecte			(21)	Gray; No Odor
·	essure Grouted 47' to sur		(21)	Gray, No Gaor
1040: Rods and Toolin				
	PT0007 (Location 22); ha	nd clear 5'		
1100: Drilling Commer				
1120: Sample Collecte		05.0-20220216	(22)	Brown; Organic Odor
- Very Poor	producing formation.			
1140: Sample Collecte	d FS1-DPT0007-0	12.0-20220216	(22)	Brown; Organic Odor
1200: Sample Collecte	d FS1-DPT0007-0	17.0-20220216	(22)	Brown; Organic Odor
1225: Sample Collecte	d FS1-DPT0007-0	25.0-20220216	(22)	Gray; No Odor
– MS/MSD Colle				
0000: Sample Collecte		<mark>16-01 – DUP of FS1-D</mark> I		
1250: Sample Collecte			(22)	Gray; No Odor
1315: Sample Collecte			(22)	Gray; No Odor
	essure Grouted 47' to sur	rface through rods		
1355: Rods and Toolin	_			
1400: Sample Collecte				
•	ted by pouring PFAS free			
	PT0008 (Location 23); ha	nd clear 5		
1415: Drilling Commer		05 0 20220216	(22)	Prown, Organic Odor
1445: Sample Collecte	ducing Formation	UJ.U-ZUZZUZIO	(23)	Brown; Organic Odor
1515: Sample Collecte	_	12 0-20220216	(23)	Brown; Organic Odor
1545: Sample Collecte			(23)	Brown; Organic Odor
·	ducing Formation	17.0 20220210	(23)	2.5 Will, Orbaille Odol
1615: Sample Collecte	-	25.0-20220216	(23)	Gray; No Odor
1630: Site Secured; Tt,				
		1.12/	/	

No alter 91.00
Berud 02/16/22 @ 1630

	Mick Bran ner: Sunr Leve n and Safety (F	ck Sorden key Ritter Idon Black-Godfrey ny – 58 degrees F II D IAS): Topics – PPE; SSHAS e DPT GW Investigation at		Geologist Driller Tech	Tt GPI GPI					
0635: Tt/GPI	on site: HAS M	eeting; Daily Prep								
0655: Drilling		- · · ·								
0720: Sample		FS1-DPT0008-035.0-2	0220217	(23)	Gray; No Odor					
0745: Sample		FS1-DPT0008-045.0-2	0220217	(23)	Gray; No Odor					
0750: Sample		FS1-FB-20220217-01			•					
– Blank	collected in sa	mpling area of Location 2	3							
0805: FS1-DP	Γ0008 pressure	e grouted 47' to surface t	nrough rods; FS1	locations co	omplete					
0820: Rods ar	nd Tooling Dec	on'd with steam. CS mee	ting with utility lo	cators.						
0835: Set up o	on STP1-DPT00	001 (Location 27); hand cl	ear 5'							
0850: Drilling	Commenced									
0915: Sample	Collected	STP1-DPT0001-005.0-	20220217	(27)	Brown; Organic Odor					
– Very I	Poor Producing	g Formation								
0940: Sample	Collected	STP1-DPT0001-010.0-	20220217	(27)	Brown; Organic Odor					
1005: Sample	Collected	STP1-DPT0001-016.0-	20220217	(27)	Brown; Organic Odor					
1030: Sample	Collected	STP1-DPT0001-023.0-	20220217	(27)	Gray; No Odor					
1100: Sample	Collected	STP1-DPT0001-033.0-	20220217	(27)	Gray; No Odor					
– Very I	Poor Producing	g Formation								
1130: Sample	Collected	STP1-DPT0001-042.0-	20220217	(27)	Gray; No Odor					
1145: STP1-D	45: STP1-DPT0001 Pressure Grouted 44' to surface through rods									
1205: Rods ar	nd Tooling Dec	on'd with steam								
1210: Set up o	on STP1-DPT00	002 (Location 30); Hand cl	ear 5'							
1215: Drilling	Commenced									
1235: Sample	Collected	STP1-DPT0002-005.0-	20220217	(30)	Brown; Organic Odor					
1300: Sample	Collected	STP1-DPT0002-010.0-	20220217	(30)	Brown; Organic Odor					
– Very I	Poor Producing	g Formation								
1330: Sample	Collected	STP1-DPT0002-016.0-	20220217	(30)	Brown; Organic Odor					
1355: Sample	Collected	STP1-DPT0002-023.0-		(30)	Gray; No Odor					
1420: Sample	Collected	STP1-DPT0002-033.0-	20220217	(30)	Gray; No Odor					
1450: Sample		STP1-DPT0002-042.0-	20220217	(30)	Gray; No Odor					
1500: Sample		STP1-EB-20220217-02								
		pouring PFAS free water								
		re grouted 4' to surface t	nrough rods							
	_	on'd with steam								
•		03(Location 25); busting	asphalt and hand	clear 5'						
1600: Site Sec	ured; Tt/GPI O	ffsIte								

FS1/STP1

112G09581

02/17/2022

NO ALTERATION BEYOND 02/17/2022 @ 1600



Tetra Tech, Inc. SURFACE WATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: Project No.: [] Stream [] Spring [] Pond [] Lake [X] Other: [] QA Sample Type: SAMPLING DATA: Date: 3/10/2022 Time: 845	- I - I - I			Temp.	Sampled C.O.C. N Type o [X] Lo	Location: I By:		
Depth: 0-0.5		6.62	236.18	22.79	2.49	1.77	92.6	0.12
Method: Grab		0.2200000000000000000000000000000000000	33383333334444444444	833383383383386666666666666666666666666				
SAMPLE COLLECTION INI	ORMAT		_		_	_		
Analysis PFAS QSM Table B-15		Preserv	vative I deg C			Requiremen nL HDPE Bo		Collected X
OBSERVATIONS / NOTES				MAP:				
Circle if Applicable:				See figure	Signatur	re(s):		
MS/MSD Duplicate ID No. YES STP1-FD-2022031							TH 1	

03/10/2022 STP1					112G09581				
	Personnel:	Chuck Sorden		(CS)	Geologist	Tt 			
	NAC - All	Kyle Hoard		(KH)	Tech	Tt			
	Weather: PPE:	Partly Cloudy 79 Level D	aegrees F						
		ety (HAS): Topic	c DDE-CCUAC	D. IDW					
		in surface water							
	Objective. Deg	iii sui iace watei	Sampling Ever	ıı					
0700:	CS on site; gathe	ring equipment a	and supplies						
	KH on site: HAS I								
	Arrive back at ST		•						
0805:	Sample Collected	STP1-S\	N0010-000.5-2	20220310	(20)	PFAS Table B15			
	-MS/MSD Collect	ed							
0000:	00: Sample Collected STP1-FD-20220310-01 – DUP of STP1-SW0010-000.5								
0830:	Arrive at FS1-SW	0001 (Location 9	9)						
0845:	Sample Collected	fS1-SW	0001-000.5-20	0220310	(09)	PFAS Table B15			
0855:	Arrive at STP1-S\	W0011 (Location	14)						
0910:	Sample Collected	STP1-S\	N0011-000.5-2	20220310	(14)	PFAS Table B15			
					it moderate to heav	yy rain			
	Rain ceased. Pre		STP1-SW0012	2 (Location 1	L2)				
	Ryan O'Meara O								
	Sample Collected		N0012-000.5-2	20220310	(12)	PFAS Table B15			
	Sample Collected		N0013-000.5-2		(11)	PFAS Table B15			
	Sample Collected		N0014-000.5-2		(10)	PFAS Table B15			
	Sample Collected		N0015-000.5-2		(13)	PFAS Table B15			
1200:	Sample Collected	STP1-E	3-20220310-01	L – collected	through tubing				

STP1-FB-20220310-01 1240: Tt offsite to get canoe from Palm Bay to collect surface water samples at FS3

NO ALTERATION BEYOND 03/10/22 @ 1240

1210: Sample Collected

APPENDIX C LABORATORY ANALYTICAL REPORTS (PROVIDED IN ELECTRONIC VERSION ONLY)



National Aeronautics and Space Administration

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Signature

5/13/2022

Date

Company Name: Pace Analytical Services

Company Representative Name: Felicia Grogan

Company Representative Title: Director Laboratory Operations Company Address: 106 Vantage Point Dr. Cayce SC 29172

Company Representative Phone: 704-572-1652

Company Representative E-Mail: felicia.grogan@pacelab.com



Report of Analysis

Tetra Tech

Foster Plaza 7 661 Anderson Drive Pittsburgh, PA 15220 Attention: Chuck Sorden

Project Name: KSC PFAS

Project Number: 112G09237

Lot Number: WL14016

Date Completed:01/07/2022

Kathy Smith

01/07/2022 12:45 PM Approved and released by: Project Manager II: **Kathy E. Smith**





The electronic signature above is the equivalent of a handwritten signature.

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SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

Case Narrative Tetra Tech Lot Number: WL14016

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the Pace Quality Assurance Management Plan (QAMP), applicable Shealy standard operating procedures (SOPs), the 2003 NELAC standard, and Shealy policies. Additionally, the DoD QSM version 5.3 has been followed for these samples, and specifically Table B-15 was followed for all PFAS samples. Any exceptions to the QAMP, SOPs, NELAC standards, the DoD QSM, or policies are qualified on the results page or discussed below.

All QC associated with these samples was in compliance with DOD QSM 5.3 table B-15 and our PFAS SOP.

Correction factors (CF) are used to calculate the original sample concentration. The CF is the inverse of the concentration factor (sample volume / extract final volume) times the dilution factor (DF). For undiluted analysis. For undiluted analysis, the extract is prepared for injection by adding 182 uL of sample extract + 8 uL of reagent water + 10 uL of internal standard solution to a polypropylene autosampler vial. An extra correction factor of 0.91 (182 uL / 200 uL = 0.91) applies. The CF is calculated as follows:

CF = DF * FV / Vo

FV is volume of extract (mL)
Vo is initial sample volume (mL)
DF is dilution factor. For undiluted analysis, DF = 1/0.91.

Sample concentration for aqueous samples:

Concentration (ng/L) = Cs*CF,

$$C_{s} = \frac{\left(\frac{(A_{s} \times C_{is})}{A_{is}}\right) - B}{M1}$$

Where

C_s is on column concentration of target analyte in the sample (ng/L)
C_{is} is concentration of internal standard in the sample (ng/L)
A_s is peak response of target analyte in the sample
A_{is} is peak response of internal standard in the sample
M1 is the average RF from ICAL or the slope from linear regression ICAL
B is the y-intercept from the ICAL

SC DHEC No: 32010001 NELAC No: E87653 NC DENR No: 329 NC Field Parameters No: 5639

For solid samples:

CF = DF * FV / Ws/S/1000

FV is volume of extract (mL)
Ws is initial sample weight (gram)
S is %Solids
DF is dilution factor. For undiluted analysis, DF = 1/0.91.

Concentration (ug/kg) = Cs*CF,

$$C_{s} = \frac{\left(\frac{(A_{s} \times C_{is})}{A_{is}}\right) - B}{M1}$$

Where

C_s is on column concentration of target analyte in the sample (ng/L)
C_{is} is concentration of internal standard in the sample (ng/L)
A_s is peak response of target analyte in the sample
A_{is} is peak response of internal standard in the sample
M1 is the average RF from ICAL or the slope from linear regression ICAL
B is the y-intercept from the ICAL

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, Fecal Coliform Colilert-18, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-

2011, Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

PFAS

The method blank associated with batch 25957 had 6:2 FTS detected at a concentration that was above the MDL but below ½ the PQL. All samples associated with this method blank that have detections for 6:2 FTS have been flagged with a "B".

The method blank for prep batch 25999 contained analyte: PFOS greater than the acceptance criteria. The associated samples, WL14016-015, WL14016-016, WL14016-017, WL14016-018, WL14016-025, WL14016-026, did not contain detections for the target analyte; therefore, re-extraction and/or re-analysis of samples was not performed. The data has been reported.

SC DHEC No: 32010001 NELAC No: E87653 NC DENR No: 329 NC Field Parameters No: 5639

The method blank for prep batch 25999 contained analyte: PFOS greater than the acceptance criteria. The associated samples, WL14016-022, WL14016-023, WL14016-024, contained detections for this analyte at concentrations greater than 10X the value found in the method blank; therefore sample results are not impacted. The data has been reported.

TOC

The MS/MSD associated with sample WL14016-024 had TOC recovered outside of the acceptance limits. The LCS was recovered within the required acceptance limits; therefore, this demonstrates a matrix effect and data quality is not impacted.

Sample Summary Tetra Tech

Lot Number: WL14016
Project Name: KSC PFAS
Project Number: 112G09237

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	FS3-RB01-20211209	Aqueous	12/09/2021 0930	12/14/2021
002	FS3-SB0001-011.5-20211209	Solid	12/09/2021 1155	12/14/2021
003	FS3-SB0001-025.5-20211209	Solid	12/09/2021 1200	12/14/2021
004	FS3-SB0001-038.5-20211209	Solid	12/09/2021 1205	12/14/2021
005	FS3-SB0001-055.5-20211209	Solid	12/09/2021 1210	12/14/2021
006	FS3-SB0001-059.5-20211209	Solid	12/09/2021 1215	12/14/2021
007	FS3-SB0001-070.5-20211209	Solid	12/09/2021 1220	12/14/2021
008	FS3-FB01-20211209	Aqueous	12/09/2021 1230	12/14/2021
009	SWB01-20211209	Aqueous	12/09/2021 1235	12/14/2021
010	SWB02-20211209	Aqueous	12/09/2021 1240	12/14/2021
011	STP1-RB02-20211209	Aqueous	12/09/2021 1630	12/14/2021
012	STP1-SB0001-009.5-20211209	Solid	12/09/2021 1730	12/14/2021
013	STP1-SB0001-021.5-20211209	Solid	12/09/2021 1735	12/14/2021
014	STP1-SB0001-029.5-20211209	Solid	12/09/2021 1740	12/14/2021
015	STP1-SB0001-043.5-20211210	Solid	12/10/2021 0810	12/14/2021
016	STP1-SB0001-045.5-20211210	Solid	12/10/2021 0815	12/14/2021
017	STP1-SB0001-049.5-20211210	Solid	12/10/2021 0820	12/14/2021
018	STP1-SB0001-053.5-20211210	Solid	12/10/2021 0830	12/14/2021
019	STP1-FB02-20211210	Aqueous	12/10/2021 0835	12/14/2021
020	FS1-RB03-20211210	Aqueous	12/10/2021 1000	12/14/2021
021	FS1-SB0001-013.5-20211210	Solid	12/10/2021 1200	12/14/2021
022	FS1-SB0001-019.5-20211210	Solid	12/10/2021 1205	12/14/2021
023	FS1-SB0001-033.5-20211210	Solid	12/10/2021 1210	12/14/2021
024	FS1-SB0001-046.5-20211210	Solid	12/10/2021 1215	12/14/2021
025	FS1-SB0001-052.5-20211210	Solid	12/10/2021 1220	12/14/2021
026	FS1-SB0001-059.5-20211210	Solid	12/10/2021 1225	12/14/2021
027	FS1-FB03-20211210	Aqueous	12/10/2021 1230	12/14/2021

(27 samples)

Detection Summary Tetra Tech

Lot Number: WL14016
Project Name: KSC PFAS
Project Number: 112G09237

Sampl	e Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
002	FS3-SB0001-011.5-20211209	Solid	TOC	Walkley-Black	20000		mg/kg	9
002	FS3-SB0001-011.5-20211209	Solid	PFHxS	PFAS by ID	1.1	1	ug/kg	10
002	FS3-SB0001-011.5-20211209	Solid	PFPeA	PFAS by ID	0.30	1	ug/kg	10
002	FS3-SB0001-011.5-20211209	Solid	PFOS	PFAS by ID	3.2		ug/kg	10
003	FS3-SB0001-025.5-20211209	Solid	TOC	Walkley-Black	4200		mg/kg	12
003	FS3-SB0001-025.5-20211209	Solid	6:2 FTS	PFAS by ID	5.4	V	ug/kg	13
003	FS3-SB0001-025.5-20211209	Solid	PFHxS	PFAS by ID	0.38	1	ug/kg	13
003	FS3-SB0001-025.5-20211209	Solid	PFOS	PFAS by ID	4.7		ug/kg	13
004	FS3-SB0001-038.5-20211209	Solid	TOC	Walkley-Black	1500		mg/kg	15
004	FS3-SB0001-038.5-20211209	Solid	6:2 FTS	PFAS by ID	3.8	V	ug/kg	16
004	FS3-SB0001-038.5-20211209	Solid	PFHxS	PFAS by ID	0.58	1	ug/kg	16
004	FS3-SB0001-038.5-20211209	Solid	PFOS	PFAS by ID	4.3		ug/kg	16
005	FS3-SB0001-055.5-20211209	Solid	TOC	Walkley-Black	2400		mg/kg	18
005	FS3-SB0001-055.5-20211209	Solid	6:2 FTS	PFAS by ID	3.4	V	ug/kg	19
005	FS3-SB0001-055.5-20211209	Solid	PFOS	PFAS by ID	0.30	I	ug/kg	19
006	FS3-SB0001-059.5-20211209	Solid	TOC	Walkley-Black	18000		mg/kg	21
006	FS3-SB0001-059.5-20211209	Solid	6:2 FTS	PFAS by ID	1.7	VI	ug/kg	22
007	FS3-SB0001-070.5-20211209	Solid	TOC	Walkley-Black	1900		mg/kg	24
007	FS3-SB0001-070.5-20211209	Solid	6:2 FTS	PFAS by ID	1.6	VI	ug/kg	25
012	STP1-SB0001-009.5-20211209	Solid	TOC	Walkley-Black	18000		mg/kg	35
012	STP1-SB0001-009.5-20211209	Solid	6:2 FTS	PFAS by ID	1.2	VI	ug/kg	36
012	STP1-SB0001-009.5-20211209	Solid	PFOS	PFAS by ID	1.9		ug/kg	36
013	STP1-SB0001-021.5-20211209	Solid	TOC	Walkley-Black	4600		mg/kg	38
013	STP1-SB0001-021.5-20211209	Solid	6:2 FTS	PFAS by ID	1.0	VI	ug/kg	39
013	STP1-SB0001-021.5-20211209	Solid	PFOS	PFAS by ID	0.76	- 1	ug/kg	39
014	STP1-SB0001-029.5-20211209	Solid	TOC	Walkley-Black	880		mg/kg	41
014	STP1-SB0001-029.5-20211209	Solid	PFOS	PFAS by ID	0.55	- 1	ug/kg	42
015	STP1-SB0001-043.5-20211210	Solid	TOC	Walkley-Black	1500		mg/kg	44
016	STP1-SB0001-045.5-20211210	Solid	TOC	Walkley-Black	3400		mg/kg	47
017	STP1-SB0001-049.5-20211210	Solid	TOC	Walkley-Black	3000		mg/kg	50
018	STP1-SB0001-053.5-20211210	Solid	TOC	Walkley-Black	3700		mg/kg	53
021	FS1-SB0001-013.5-20211210	Solid	TOC	Walkley-Black	7400		mg/kg	60
021	FS1-SB0001-013.5-20211210	Solid	8:2 FTS	PFAS by ID	2.6		ug/kg	61
021	FS1-SB0001-013.5-20211210	Solid	PFHxS	PFAS by ID	0.53	1	ug/kg	61
021	FS1-SB0001-013.5-20211210	Solid	PFHpA	PFAS by ID	0.37	- 1	ug/kg	61
021	FS1-SB0001-013.5-20211210	Solid	PFHxA	PFAS by ID	0.58	1	ug/kg	61
021	FS1-SB0001-013.5-20211210	Solid	PFOA	PFAS by ID	0.28	1	ug/kg	61
021	FS1-SB0001-013.5-20211210	Solid	PFPeA	PFAS by ID	0.57	- 1	ug/kg	61
021	FS1-SB0001-013.5-20211210	Solid	PFOS	PFAS by ID	4.6	V	ug/kg	61
022	FS1-SB0001-019.5-20211210	Solid	TOC	Walkley-Black	4200		mg/kg	63
022	FS1-SB0001-019.5-20211210	Solid	8:2 FTS	PFAS by ID	4.4		ug/kg	64
022	FS1-SB0001-019.5-20211210	Solid	6:2 FTS	PFAS by ID	1.5	I	ug/kg	64
022	FS1-SB0001-019.5-20211210	Solid	PFHxS	PFAS by ID	2.2		ug/kg	64

Detection Summary (Continued)

Lot Number: WL14016

Sample	e Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
022	FS1-SB0001-019.5-20211210	Solid	PFHpA	PFAS by ID	0.45	ı	ug/kg	64
022	FS1-SB0001-019.5-20211210	Solid	PFHxA	PFAS by ID	0.61	- 1	ug/kg	64
022	FS1-SB0001-019.5-20211210	Solid	PFNA	PFAS by ID	0.39	1	ug/kg	64
022	FS1-SB0001-019.5-20211210	Solid	PFOA	PFAS by ID	0.86	1	ug/kg	64
022	FS1-SB0001-019.5-20211210	Solid	PFPeA	PFAS by ID	0.64	1	ug/kg	64
022	FS1-SB0001-019.5-20211210	Solid	PFOS	PFAS by ID	29	V	ug/kg	64
023	FS1-SB0001-033.5-20211210	Solid	TOC	Walkley-Black	1200		mg/kg	66
023	FS1-SB0001-033.5-20211210	Solid	8:2 FTS	PFAS by ID	2.2	- 1	ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	6:2 FTS	PFAS by ID	4.6		ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	PFBS	PFAS by ID	0.55	- 1	ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	PFHpS	PFAS by ID	0.91	1	ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	PFPeS	PFAS by ID	0.64	1	ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	PFHxS	PFAS by ID	9.4		ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	PFBA	PFAS by ID	0.34	I	ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	PFHpA	PFAS by ID	0.48	- 1	ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	PFHxA	PFAS by ID	2.1		ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	PFOA	PFAS by ID	1.5		ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	PFPeA	PFAS by ID	1.2		ug/kg	67
023	FS1-SB0001-033.5-20211210	Solid	PFOS	PFAS by ID	110	V	ug/kg	67
024	FS1-SB0001-046.5-20211210	Solid	TOC	Walkley-Black	590	S	mg/kg	69
024	FS1-SB0001-046.5-20211210	Solid	PFBS	PFAS by ID	0.31	- 1	ug/kg	70
024	FS1-SB0001-046.5-20211210	Solid	PFHpS	PFAS by ID	0.29	I	ug/kg	70
024	FS1-SB0001-046.5-20211210	Solid	PFPeS	PFAS by ID	0.33	1	ug/kg	70
024	FS1-SB0001-046.5-20211210	Solid	PFHxS	PFAS by ID	3.2		ug/kg	70
024	FS1-SB0001-046.5-20211210	Solid	PFHxA	PFAS by ID	0.64	I	ug/kg	70
024	FS1-SB0001-046.5-20211210	Solid	PFOA	PFAS by ID	0.54	- 1	ug/kg	70
024	FS1-SB0001-046.5-20211210	Solid	PFPeA	PFAS by ID	0.32	I	ug/kg	70
024	FS1-SB0001-046.5-20211210	Solid	PFOS	PFAS by ID	8.4	V	ug/kg	70
025	FS1-SB0001-052.5-20211210	Solid	TOC	Walkley-Black	1300		mg/kg	72
026	FS1-SB0001-059.5-20211210	Solid	TOC	Walkley-Black	1300		mg/kg	75

(73 detections)

Client: **Tetra Tech**Laboratory ID: **WL14016-001**

Description: FS3-RB01-20211209 Matrix: Aqueous

Date Sampled:12/09/2021 0930 Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237

 Run
 Prep Method
 Analytical Method
 Dilution
 Analysis Date
 Analyst
 Prep Date
 Batch

 1
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/21/2021 1605
 JJG
 12/20/2021 1123
 26214

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
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		mits							
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		0-150							
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·		D-150							
		0-150							
_		0-150							
13CG DEDA	103 50	150							

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C6_PFDA

13C7_PFUdA

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

103

85

Client: Tetra Tech

Description: FS3-RB01-20211209

Date Sampled:12/09/2021 0930 Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237

Laboratory ID: WL14016-001

Matrix: Aqueous

Surrogate	Run 1 Q % Recovery	Acceptance Limits	
13C8_PFOA	109	50-150	
13C8_PFOS	101	50-150	
13C9_PFNA	104	50-150	
d-EtFOSA	82	50-150	
d5-EtFOSAA	99	50-150	
d3-MeFOSAA	96	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Client: Tetra Tech Laboratory ID: WL14016-002

Description: FS3-SB0001-011.5-20211209

Matrix: Solid

Date Sampled:12/09/2021 1155 Project Name: KSC PFAS % Solids: 80.9 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method **Analytical Method Dilution Analysis Date Analyst Prep Date Batch**

(TOC) Walkley-Black 01/05/2022 1700 DAK 27195

	CAS	Analytical					
Parameter	Number	Method	Result Q	LOQ	LOD	DL	Units Run
TOC	,	Walkley-Black	20000	2000	1000	980	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-002

Description: FS3-SB0001-011.5-20211209

Date Sampled:12/09/2021 1155 Project Name: KSC PFAS % Solids: 80.9 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

 Run
 Prep Method
 Analytical Method
 Dilution
 Analysis Date
 Analyst
 Prep Date
 Batch

 1
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/17/2021 1329
 MMM
 12/16/2021 1855
 25957

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.5	U	4.9	2.5	1.2	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.1	I	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.30	I	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	3.2		1.2	0.60	0.25	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	
13C2_4:2FTS		90	50-150	
13C2_6:2FTS		106	50-150	
13C2_8:2FTS		92	50-150	
13C2_PFDoA		82	50-150	
13C2_PFTeDA		82	50-150	
13C3_PFBS		74	50-150	
13C3_PFHxS		72	50-150	
13C3-HFPO-DA		69	50-150	
13C4_PFBA		68	50-150	
13C4_PFHpA		75	50-150	
13C5_PFHxA		74	50-150	
13C5_PFPeA		79	50-150	
13C6_PFDA		77	50-150	
13C7_PFUdA		87	50-150	

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS3-SB0001-011.5-20211209

Date Sampled:12/09/2021 1155 Project Name: KSC PFA

Project Name: **KSC PFAS** % Solids: **80.9 12/15/2021 0111**

Laboratory ID: WL14016-002

Matrix: Solid

Date Received: 12/14/2021 Project Number: 112G09237

Surrogate	Run 1 Q % Recovery	Acceptance Limits	
13C8_PFOA	75	50-150	
13C8_PFOS	79	50-150	
13C9_PFNA	73	50-150	
d-EtFOSA	81	50-150	
d5-EtFOSAA	87	50-150	
d3-MeFOSAA	88	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*

Project Name: KSC PFAS

Client: Tetra Tech

Laboratory ID: WL14016-003

Description: FS3-SB0001-025.5-20211209

Matrix: Solid

Date Sampled:12/09/2021 1200

Date Received: 12/14/2021 Project Number: 112G09237 % Solids: 79.0 12/15/2021 0111

Run Prep Method **Analytical Method** Dilution **Analysis Date Analyst Prep Date Batch** (TOC) Walkley-Black 01/05/2022 1700 DAK 27195

CAS Analytical **Parameter** Number Method Result Q LOQ LOD DL Units Run TOC Walkley-Black 4200 200 100 mg/kg 99

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-003

Description: FS3-SB0001-025.5-20211209

Date Sampled:12/09/2021 1200 Project Name: KSC PFAS % Solids: 79.0 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

RunPrep MethodAnalytical MethodDilutionAnalysis DateAnalystPrep DateBatch1SOP SPEPFAS by ID SOP QSM B-15112/17/2021 1340MMM12/16/2021 1855 25957

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	5.4	٧	2.5	1.3	0.63	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.6	U	5.1	2.6	1.3	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.38	1	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	4.7		1.3	0.65	0.25	ug/kg	1
		otance nits							

Surrogate	Run 1 Acce Q % Recovery Li	eptance imits
13C2_4:2FTS	78 5	0-150
13C2_6:2FTS	91 5	0-150
13C2_8:2FTS	87 5	0-150
13C2_PFDoA	80 5	0-150
13C2_PFTeDA	80 5	0-150
13C3_PFBS	78 5	0-150
13C3_PFHxS	74 5	0-150
13C3-HFPO-DA	77 5	0-150
13C4_PFBA	74 5	0-150
13C4_PFHpA	74 5	0-150
13C5_PFHxA	70 5	0-150
13C5_PFPeA	83 5	0-150
13C6_PFDA	72 5	0-150
13C7_PFUdA	84 5	0-150

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Date Sampled:12/09/2021 1200

Laboratory ID: WL14016-003

Description: FS3-SB0001-025.5-20211209

Matrix: Solid

Project Name: KSC PFAS

% Solids: 79.0 12/15/2021 0111

Date Received: 12/14/2021

Project Number: 112G09237

Surrogate	Run 1 A Q % Recovery	cceptance Limits
13C8_PFOA	73	50-150
13C8_PFOS	84	50-150
13C9_PFNA	73	50-150
d-EtFOSA	78	50-150
d5-EtFOSAA	52	50-150
d3-MeFOSAA	84	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-004 Matrix: Solid

Batch

27195

Description: FS3-SB0001-038.5-20211209

Date Sampled:12/09/2021 1205

Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237 % Solids: 78.0 12/15/2021 0111

Run Prep Method **Analytical Method** Dilution **Analysis Date Analyst Prep Date** (TOC) Walkley-Black 01/05/2022 1700 DAK

CAS Analytical

Parameter Number Method Result Q LOQ LOD DL Units Run TOC Walkley-Black 1500 200 100 mg/kg 99

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-004

Description: FS3-SB0001-038.5-20211209

Date Sampled:12/09/2021 1205 Project Name: KSC PFAS % Solids: 78.0 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

RunPrep MethodAnalytical MethodDilutionAnalysis DateAnalystPrep DateBatch1SOP SPEPFAS by ID SOP QSM B-15112/17/2021 1350MMM12/16/2021 185525957

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.2	U	2.4	1.2	0.61	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	1.2	U	2.4	1.2	0.61	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.2	U	2.4	1.2	0.61	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	٧	2.4	1.2	0.61	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.2	U	2.4	1.2	0.61	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.4	U	4.8	2.4	1.2	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.2	U	2.4	1.2	0.61	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.2	U	2.4	1.2	0.61	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.2	U	2.4	1.2	0.61	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.2	U	2.4	1.2	0.61	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.58	ı	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	4.3		1.2	0.60	0.24	ug/kg	1
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LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS3-SB0001-038.5-20211209

Project Name: KSC PFAS

Laboratory ID: WL14016-004

Matrix: Solid

% Solids: 78.0 12/15/2021 0111

Date Received: 12/14/2021

Date Sampled:12/09/2021 1205

Project Number: 112G09237

Surrogate	Run 1 Q % Recovery	Acceptance Limits
13C8_PFOA	77	50-150
13C8_PFOS	81	50-150
13C9_PFNA	76	50-150
d-EtFOSA	84	50-150
d5-EtFOSAA	87	50-150
d3-MeFOSAA	88	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-005

Description: FS3-SB0001-055.5-20211209

Project Name: KSC PFAS

Matrix: Solid

Date Received: 12/14/2021

Date Sampled:12/09/2021 1210

% Solids: 83.7 12/15/2021 0111

Project Number: 112G09237

Run Prep Method

Analytical Method Dilution (TOC) Walkley-Black

Analysis Date Analyst 01/05/2022 1700 DAK

Prep Date

Batch 27195

Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units Run
TOC		Walkley-Black	2400	190	95	97	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-005

Description: FS3-SB0001-055.5-20211209

Date Sampled:12/09/2021 1210 Project Name: KSC PFAS % Solids: 83.7 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

 Run
 Prep Method
 Analytical Method
 Dilution
 Analysis Date
 Analyst
 Prep Date
 Batch

 1
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/17/2021 1422
 MMM
 12/16/2021 1855
 25957

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.4	٧	2.3	1.2	0.57	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.3	U	4.6	2.3	1.1	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	0.30	I	1.1	0.55	0.23	ug/kg	1
Ru Surrogate Q % Rec		otance nits							

Surrogate	Q %	Run 1 Recovery	Acceptance Limits
13C2_4:2FTS		93	50-150
13C2_6:2FTS		111	50-150
13C2_8:2FTS		104	50-150
13C2_PFDoA		85	50-150
13C2_PFTeDA		81	50-150
13C3_PFBS		85	50-150
13C3_PFHxS		80	50-150
13C3-HFPO-DA		84	50-150
13C4_PFBA		83	50-150
13C4_PFHpA		83	50-150
13C5_PFHxA		81	50-150
13C5_PFPeA		92	50-150
13C6_PFDA		77	50-150
13C7_PFUdA		88	50-150

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-005

Description: FS3-SB0001-055.5-20211209

Matrix: Solid

Date Sampled:12/09/2021 1210

Date Received: 12/14/2021

% Solids: 83.7 12/15/2021 0111

Project Number: 112G09237

Project Name: KSC PFAS

Run 1 A Q % Recovery	Acceptance Limits			
78	50-150			
85	50-150			
82	50-150			
88	50-150			
86	50-150			
92	50-150			
	Q % Recovery 78 85 82 88 88 86	Q % Recovery Limits 78 50-150 85 50-150 82 50-150 88 50-150 86 50-150	Q % Recovery Limits 78 50-150 85 50-150 82 50-150 88 50-150 86 50-150	Q % Recovery Limits 78 50-150 85 50-150 82 50-150 88 50-150 86 50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Client: Tetra Tech

Laboratory ID: WL14016-006

Description: FS3-SB0001-059.5-20211209

Matrix: Solid

Date Sampled:12/09/2021 1215

Project Name: KSC PFAS % Solids: 5:

Date Received: 12/14/2021 Project Number: 112G09237

% Solids: 59.1 12/15/2021 0111

710,000.11.11.12.01.1

Run Prep Method Analytic

Analytical Method Dilution Ana (TOC) Walkley-Black 1 01/0

Analysis Date Analyst 01/05/2022 1700 DAK

Prep Date

Batch 27195

Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units Run
TOC		Walkley-Black	18000	1800	900	920	mg/kg 1

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-006

Description: FS3-SB0001-059.5-20211209

Date Sampled:12/09/2021 1215 Project Name: KSC PFAS % Solids: 59.1 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

RunPrep MethodAnalytical MethodDilutionAnalysis DateAnalystPrep DateBatch1SOP SPEPFAS by ID SOP QSM B-15112/17/2021 1433MMM12/16/2021 1855 25957

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.5	U	2.9	1.5	0.72	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	1.5	U	2.9	1.5	0.72	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.5	U	2.9	1.5	0.72	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.7	VI	2.9	1.5	0.72	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.5	U	2.9	1.5	0.72	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.9	U	5.8	2.9	1.4	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.5	U	2.9	1.5	0.72	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.5	U	2.9	1.5	0.72	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.5	U	2.9	1.5	0.72	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.5	U	2.9	1.5	0.72	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	0.70	U	1.4	0.70	0.29	ug/kg	1
		otance nits							
		-150							
13C2_6:2FTS	88 50	-150							
13C2_8:2FTS	78 50	-150							
13C2_PFDoA	69 50	-150							
13C2_PFTeDA	67 50	-150							
13C3_PFBS	64 50	-150							
		-150							
		-150							
		-150							
_		-150							
•		-150							
		-150							
_		-150							
- 4007 PELLIA									

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

75

LOD = Limit of Detection

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: FS3-SB0001-059.5-20211209

Laboratory ID: **WL14016-006**

Matrix: Solid

Date Sampled:12/09/2021 1215

Project Name: KSC PFAS

% Solids: **59.1 12/15/2021 0111**

Date Received: 12/14/2021

Project Number: 112G09237

Run 1 / Q % Recovery	Acceptance Limits
61	50-150
68	50-150
64	50-150
66	50-150
71	50-150
73	50-150
	Q % Recovery 61 68 64 66 71

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*

Client: Tetra Tech Laboratory ID: WL14016-007

Description: FS3-SB0001-070.5-20211209 Matrix: Solid

Date Sampled:12/09/2021 1220 Project Name: KSC PFAS % Solids: 76.2 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method **Analytical Method** Dilution **Analysis Date Analyst Prep Date Batch** (TOC) Walkley-Black 01/05/2022 1700 DAK 27195

CAS Analytical **Parameter** Number Method Result Q LOQ LOD DL Units Run TOC Walkley-Black 1900 200 100 mg/kg 98

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-007

Description: FS3-SB0001-070.5-20211209

Date Sampled:12/09/2021 1220 Project Name: KSC PFAS % Solids: 76.2 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

 Run
 Prep Method
 Analytical Method
 Dilution
 Analysis Date
 Analyst
 Prep Date
 Batch

 1
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/17/2021 1444
 MMM
 12/16/2021 1855
 25957

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS) 756426-58-1	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3.) 763051-92-9	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.6	VI	2.3	1.2	0.58	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.3	U	4.6	2.3	1.2	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	
		otance nits							
13C2_4:2FTS		-150							
13C2_6:2FTS		-150							
13C2_8:2FTS	87 50	-150							
13C2_PFDoA	81 50	-150							
13C2_PFTeDA	76 50	-150							
13C3_PFBS	74 50	-150							
13C3_PFHxS	73 50	-150							
13C3-HFPO-DA	70 50	-150							
13C4_PFBA	72 50	-150							
13C4_PFHpA	73 50	-150							
13C5_PFHxA	73 50	-150							
13C5_PFPeA	80 50	-150							
13C6 PFDA									
	75 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Project Name: KSC PFAS

Client: Tetra Tech

Laboratory ID: WL14016-007

Description: FS3-SB0001-070.5-20211209

Matrix: Solid

Date Sampled:12/09/2021 1220

% Solids: 76.2 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: **Tetra Tech**Laboratory ID: **WL14016-008**

Description: FS3-FB01-20211209 Matrix: Aqueous

Date Sampled:12/09/2021 1230 Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237

 Run
 Prep Method
 Analytical Method
 Dilution
 Analysis Date
 Analyst
 Prep Date
 Batch

 1
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/21/2021 1616
 JJG
 12/20/2021 1123 26214

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Rif
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.9	U	7.8	3.9	1.9	ng/L	
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)		PFAS by ID SOP	3.9	U	7.8	3.9	1.9	ng/L	
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.9	U	7.8	3.9	1.9	ng/L	
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.9	U	7.8	3.9	1.9	ng/L	
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.9	U	7.8	3.9	1.9	ng/L	
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.9	U	7.8	3.9	1.9	ng/L	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.9	U	7.8	3.9	1.9	ng/L	
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.9	U	7.8	3.9	1.9	ng/L	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.9	U	7.8	3.9	1.9	ng/L	
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.9	U	7.8	3.9	1.9	ng/L	
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.97	ng/L	1
R Surrogate Q % Re		otance nits							
		-150							
13C2_6:2FTS	101 50	-150							
13C2_8:2FTS	105 50	-150							
13C2_PFDoA	84 50	-150							
13C2_PFTeDA	66 50	-150							
13C3_PFBS	99 50	-150							
13C3_PFHxS	112 50	-150							
13C3-HFPO-DA	104 50	-150							
13C4_PFBA	103 50	-150							
_		-150							
13C5_PFHxA	107 50	-150							
_		-150							
_		-150							
13C7_PFUdA		-150							

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U = Not detected at or above the LOQ

Q = Out of holding time

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N = Recovery is out of criteria

W = Reported on wet weight basis

LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%

I = Estimated result < LOQ and \geq DL

D = Dilution > 1

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: FS3-FB01-20211209

Date Sampled:12/09/2021 1230 Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237

Laboratory ID: WL14016-008

Matrix: Aqueous

Surrogate	Run 1 Q % Recovery	Acceptance Limits	
13C8_PFOA	102	50-150	
13C8_PFOS	95	50-150	
13C9_PFNA	101	50-150	
d-EtFOSA	91	50-150	
d5-EtFOSAA	86	50-150	
d3-MeFOSAA	95	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*

Client: **Tetra Tech**Laboratory ID: **WL14016-009**

Description: SWB01-20211209 Matrix: Aqueous

Date Sampled:12/09/2021 1235 Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237

RunPrep MethodAnalytical MethodDilutionAnalysis DateAnalystPrep DateBatch1SOP SPEPFAS by ID SOP QSM B-15112/21/2021 1626JJG12/20/2021 1123 26214

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3	.) 763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
		otance nits							
13C2_4:2FTS		-150							
13C2_6:2FTS		-150							
13C2_8:2FTS	109 50	-150							
13C2_PFDoA	76 50	-150							
13C2 PFTeDA	73 50	-150							
13C3_PFBS		-150							
13C3_PFHxS		-150							
13C3-HFPO-DA		-150							
13C4_PFBA		-150							
13C4_PFHpA		-150							
13C5_PFHxA		-150							
13C5_PFPeA		-150							
13C6_PFDA		-150							
1000_110/1	.5-	100							

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

50-150

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13C7_PFUdA

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88

Client: Tetra Tech

 Description: SWB01-20211209

 Date Sampled:12/09/2021 1235
 Project Name: KSC PFAS

 Date Received: 12/14/2021
 Project Number: 112G09237

Laboratory ID: **WL14016-009** Matrix: **Aqueous**

Surrogate	Run 1 A Q % Recovery	cceptance Limits	
13C8_PFOA	101	50-150	
13C8_PFOS	108	50-150	
13C9_PFNA	107	50-150	
d-EtFOSA	81	50-150	
d5-EtFOSAA	87	50-150	
d3-MeFOSAA	94	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: **Tetra Tech**Laboratory ID: **WL14016-010**

Description: SWB02-20211209 Matrix: Aqueous

Date Sampled:12/09/2021 1240 Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237

 Run
 Prep Method
 Analytical Method
 Dilution
 Analysis Date
 Analyst
 Prep Date
 Batch

 1
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/21/2021 1637
 JJG
 12/20/2021 1123 26214

Parameter		S Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-	1 PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-	9 PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-	4 PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-	2 PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-	4 PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-	6 PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-	4 PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	2 PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	6 PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-	5 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	3 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	B PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-	1 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	4 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	4 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	4 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	2 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-	1 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	4 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-	1 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-	1 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	3 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	7 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-	8 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	B PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-	1 PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
		eptance Limits							
-		50-150							
13C2_6:2FTS		50-150							
13C2_8:2FTS	97	50-150							
13C2_PFDoA		50-150							
13C2_PFTeDA		50-150							
13C3_PFBS		50-150							
		50-150							
13C3-HFPO-DA		50-150							
13C4_PFBA		50-150							
_		50-150							
		50-150							
13C5_PFPeA		50-150							
- ·									

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13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

94

81

LOD = Limit of Detection

50-150

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech Laboratory ID: WL14016-010 Description: SWB02-20211209 Matrix: Aqueous

Date Sampled:12/09/2021 1240 Project Name: KSC PFAS Date Received: 12/14/2021 Project Number: 112G09237

Surrogate	Run 1 A Q % Recovery	cceptance Limits
13C8_PFOA	98	50-150
13C8_PFOS	96	50-150
13C9_PFNA	102	50-150
d-EtFOSA	81	50-150
d5-EtFOSAA	84	50-150
d3-MeFOSAA	87	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

N = Recovery is out of criteria W = Reported on wet weight basis

P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

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Laboratory ID: WL14016-011 Client: Tetra Tech

Description: STP1-RB02-20211209

Date Sampled:12/09/2021 1630 Project Name: KSC PFAS Date Received: 12/14/2021 Project Number: 112G09237 Matrix: Aqueous

Run	Prep Method	Analytical Method Dil	ution	Analysis Date Analyst	Prep Date Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	12/21/2021 1647 JJG	12/20/2021 1123 26214

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
		otance nits							
13C2_4:2FTS	112 50	-150							
13C2_6:2FTS	101 50	-150							
13C2_8:2FTS	119 50	-150							
13C2_PFDoA	98 50	-150							
13C2_PFTeDA	77 50	-150							
13C3_PFBS	97 50	-150							
13C3_PFHxS	113 50	-150							
13C3-HFPO-DA	105 50	-150							
13C4_PFBA	106 50	-150							

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S = MS/MSD failure

50-150

50-150

50-150

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C4_PFHpA

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

13C7_PFUdA

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

106

107

101

106

100

Client: Tetra Tech

Description: STP1-RB02-20211209

Laboratory ID: WL14016-011 Matrix: Aqueous

Date Sampled:12/09/2021 1630

Project Name: KSC PFAS

Date Received: 12/14/2021

Project Number: 112G09237

Surrogate	Run 1 Q % Recovery	Acceptance Limits
13C8_PFOA	108	50-150
13C8_PFOS	107	50-150
13C9_PFNA	104	50-150
d-EtFOSA	99	50-150
d5-EtFOSAA	100	50-150
d3-MeFOSAA	109	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Client: Tetra Tech

Laboratory ID: WL14016-012

Description: STP1-SB0001-009.5-20211209

Matrix: Solid

Date Sampled:12/09/2021 1730

Project Name: KSC PFAS

% Solids: 79.7 12/15/2021 0111

Date Received: 12/14/2021

Project Number: 112G09237

Batch

Run Prep Method

Analytical Method Dilution (TOC) Walkley-Black

Analysis Date Analyst 01/05/2022 1700 DAK

Prep Date

27195

Parameter	CAS Number	Analytical Method Result	Q LOQ	LOD	DL	Units Run
TOC	W	alkley-Black 18000	1800	900	890	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-012

Description: STP1-SB0001-009.5-20211209

Date Sampled:12/09/2021 1730 Project Name: KSC PFAS % Solids: 79.7 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

RunPrep MethodAnalytical MethodDilutionAnalysis DateAnalystPrep DateBatch1SOP SPEPFAS by ID SOP QSM B-15112/17/2021 1454MMM12/16/2021 185525957

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.2	VI	2.3	1.2	0.58	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.3	U	4.6	2.3	1.2	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.2	U	2.3	1.2	0.58	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.23	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9		1.2	0.60	0.23	ug/kg	1

Surrogate	Run 1 A Q % Recovery	Acceptance Limits	
13C2_4:2FTS	86	50-150	
13C2_6:2FTS	114	50-150	
13C2_8:2FTS	88	50-150	
13C2_PFDoA	69	50-150	
13C2_PFTeDA	68	50-150	
13C3_PFBS	76	50-150	
13C3_PFHxS	69	50-150	
13C3-HFPO-DA	70	50-150	
13C4_PFBA	70	50-150	
13C4_PFHpA	69	50-150	
13C5_PFHxA	73	50-150	
13C5_PFPeA	76	50-150	
13C6_PFDA	69	50-150	
13C7_PFUdA	81	50-150	

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: STP1-SB0001-009.5-20211209

Laboratory ID: WL14016-012

Matrix: Solid

Date Sampled:12/09/2021 1730

Project Name: KSC PFAS

% Solids: 79.7 12/15/2021 0111

Date Received: 12/14/2021

Project Number: 112G09237

Surrogate	Run 1 Q % Recovery	Acceptance Limits
13C8_PFOA	71	50-150
13C8_PFOS	77	50-150
13C9_PFNA	73	50-150
d-EtFOSA	79	50-150
d5-EtFOSAA	76	50-150
d3-MeFOSAA	79	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-013

Description: STP1-SB0001-021.5-20211209

Matrix: Solid

Date Sampled:12/09/2021 1735

Project Name: KSC PFAS Date Received: 12/14/2021

% Solids: 82.6 12/15/2021 0111

Project Number: 112G09237

Prep Date Batch

Run Prep Method **Analytical Method Dilution Analysis Date Analyst** (TOC) Walkley-Black 01/05/2022 1700 DAK

27195

Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units Run
TOC		Walkley-Black	4600	200	100	99	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-013

Description: STP1-SB0001-021.5-20211209

Date Sampled:12/09/2021 1735 Project Name: KSC PFAS % Solids: 82.6 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method Analytical Method Dilution Analysis Date Analyst **Prep Date Batch** SOP SPE PFAS by ID SOP QSM B-15 12/17/2021 1505 MMM 12/16/2021 1855 25957

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.0	VI	2.3	1.2	0.57	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.3	U	4.5	2.3	1.1	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.2	U	2.3	1.2	0.57	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	0.76	1	1.1	0.55	0.23	ug/kg	1
, ,		otanco	0.70	•		0.55	0.23		9/15

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		92	50-150
13C2_6:2FTS		130	50-150
13C2_8:2FTS		98	50-150
13C2_PFDoA		76	50-150
13C2_PFTeDA		76	50-150
13C3_PFBS		80	50-150
13C3_PFHxS		78	50-150
13C3-HFPO-DA		80	50-150
13C4_PFBA		78	50-150
13C4_PFHpA		78	50-150
13C5_PFHxA		78	50-150
13C5_PFPeA		87	50-150
13C6_PFDA		69	50-150
13C7_PFUdA		86	50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

N = Recovery is out of criteria LOD = Limit of Detection W = Reported on wet weight basis Q = Out of holding time Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

V = Detected in the method blank

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

Client: Tetra Tech

Date Sampled:12/09/2021 1735

Description: STP1-SB0001-021.5-20211209

Laboratory ID: WL14016-013

Matrix: Solid

% Solids: 82.6 12/15/2021 0111

Date Received: 12/14/2021

Project Name: KSC PFAS

Project Number: 112G09237

Surrogate	Run 1 Q % Recovery	Acceptance Limits	
13C8_PFOA	77	50-150	
13C8_PFOS	80	50-150	
13C9_PFNA	78	50-150	
d-EtFOSA	81	50-150	
d5-EtFOSAA	83	50-150	
d3-MeFOSAA	91	50-150	

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

N = Recovery is out of criteria W = Reported on wet weight basis

P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-014

Description: STP1-SB0001-029.5-20211209

Matrix: Solid

Date Sampled:12/09/2021 1740

Project Name: KSC PFAS % Solids: 85.6 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method **Analytical Method Dilution Analysis Date Analyst Prep Date Batch** (TOC) Walkley-Black 01/05/2022 1700 DAK 27195

Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units Run
TOC		Walkley-Black	880	200	100	99	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-014

Description: STP1-SB0001-029.5-20211209

Date Sampled:12/09/2021 1740 Project Name: KSC PFAS % Solids: 85.6 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

RunPrep MethodAnalytical MethodDilutionAnalysis DateAnalystPrep DateBatch1SOP SPEPFAS by ID SOP QSM B-15112/17/2021 1515MMM12/16/2021 185525957

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.0	U	2.0	1.0	0.50	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	1.0	U	2.0	1.0	0.50	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.0	U	2.0	1.0	0.50	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.0	U	2.0	1.0	0.50	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.0	U	2.0	1.0	0.50	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.0	U	2.0	1.0	0.50	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.0	U	2.0	1.0	0.50	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.0	U	2.0	1.0	0.50	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.0	U	2.0	1.0	0.50	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.50	U	1.0	0.50	0.20	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	0.55	I	1.0	0.50	0.20	ug/kg	1

Surrogate	Run 1 Q % Recovery	Acceptance Limits
13C2_4:2FTS	81	50-150
13C2_6:2FTS	111	50-150
13C2_8:2FTS	83	50-150
13C2_PFDoA	65	50-150
13C2_PFTeDA	59	50-150
13C3_PFBS	68	50-150
13C3_PFHxS	65	50-150
13C3-HFPO-DA	61	50-150
13C4_PFBA	66	50-150
13C4_PFHpA	66	50-150
13C5_PFHxA	62	50-150
13C5_PFPeA	70	50-150
13C6_PFDA	61	50-150
13C7_PFUdA	69	50-150

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-014

Description: STP1-SB0001-029.5-20211209

Matrix: Solid

Date Sampled:12/09/2021 1740

% Solids: 85.6 12/15/2021 0111

Date Received: 12/14/2021

Project Name: KSC PFAS Project Number: 112G09237

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	64	50-150
13C8_PFOS	69	50-150
13C9_PFNA	66	50-150
d-EtFOSA	52	50-150
d5-EtFOSAA	66	50-150
d3-MeFOSAA	70	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-015 Matrix: Solid

Description: STP1-SB0001-043.5-20211210

Date Sampled:12/10/2021 0810

Project Name: KSC PFAS

% Solids: 76.4 12/15/2021 0111

Date Received: 12/14/2021

Run Prep Method

Project Number: 112G09237

Prep Date

Analytical Method Dilution (TOC) Walkley-Black

Analysis Date Analyst 01/05/2022 1700 DAK

Batch 27195

CAS Analytical **Parameter** Number Method Result Q LOQ LOD DL Units Run TOC Walkley-Black 1500 200 100 mg/kg 99

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-015

Matrix: Solid

Description: STP1-SB0001-043.5-20211210

Date Sampled:12/10/2021 0810

Project Name: KSC PFAS

% Solids: 76.4 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method Analytical Method Dilution **Analysis Date Analyst Prep Date Batch** 1 SOP SPE PFAS by ID SOP QSM B-15 12/19/2021 2342 JJG 12/17/2021 1218 25999 2 SOP SPE PFAS by ID SOP QSM B-15 12/27/2021 0240 NK1 12/23/2021 0934 26623 1

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.2	U	2.4	1.2	0.60	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3) 763051-92-9	PFAS by ID SOP	1.2	U	2.4	1.2	0.60	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.2	U	2.4	1.2	0.60	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.2	U	2.4	1.2	0.60	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.4	U	4.8	2.4	1.2	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.2	U	2.4	1.2	0.60	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.2	U	2.4	1.2	0.60	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.2	U	2.4	1.2	0.60	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.2	U	2.4	1.2	0.60	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.24	ug/kg	1
		otance nits Q %	Run 2 Ac Recovery	ceptance Limits					
13C2_4:2FTS	87 50	-150	103	50-150					
13C2_6:2FTS	89 50	-150	102	50-150					
13C2_8:2FTS	94 50	-150	101	50-150					
13C2_PFDoA	88 50	-150	90	50-150					
13C2_PFTeDA	92 50	-150	93	50-150					
13C3_PFBS	92 50	-150	99	50-150					
13C3_PFHxS	92 50	-150	101	50-150					
13C3-HFPO-DA	88 50	-150	98	50-150					
13C4_PFBA	87 50	-150	98	50-150					
13C4_PFHpA	89 50	-150	97	50-150					

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

101

95

97

50-150

50-150

50-150

50-150

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

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87

92

84

Client: Tetra Tech

Date Sampled:12/10/2021 0810

Description: STP1-SB0001-043.5-20211210

Project Name: KSC PFAS

Laboratory ID: WL14016-015

Matrix: Solid

% Solids: 76.4 12/15/2021 0111

Date Received: 12/14/2021

Project Number: 112G09237

8C8_PFOA 86 50-150 94 50-150 8C8_PFOS 87 50-150 95 50-150 8C9_PFNA 84 50-150 95 50-150 EtFOSA 91 50-150 95 50-150 5-EtFOSAA 85 50-150 98 50-150	Surrogate	Run 1 Q % Recovery	Acceptance Limits		Acceptance Limits
8C8_PFOS 87 50-150 95 50-150 8C9_PFNA 84 50-150 95 50-150 EtFOSA 91 50-150 95 50-150 5-EtFOSAA 85 50-150 98 50-150	13C7_PFUdA	80	50-150	100	50-150
3C9_PFNA 84 50-150 95 50-150 EEFOSA 91 50-150 95 50-150 5-EEFOSAA 85 50-150 98 50-150	13C8_PFOA	86	50-150	94	50-150
EtFOSA 91 50-150 95 50-150 5-EtFOSAA 85 50-150 98 50-150	13C8_PFOS	87	50-150	95	50-150
5-EtFOSAA 85 50-150 98 50-150	13C9_PFNA	84	50-150	95	50-150
	d-EtFOSA	91	50-150	95	50-150
3-MeFOSAA 91 50-150 97 50-150	d5-EtFOSAA	85	50-150	98	50-150
	d3-MeFOSAA	91	50-150	97	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*

Client: Tetra Tech

Laboratory ID: WL14016-016

Description: STP1-SB0001-045.5-20211210

Matrix: Solid

Date Sampled:12/10/2021 0815 Project Name: KSC PFAS % Solids: 74.5 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method

(TOC) Walkley-Black

Analytical Method Dilution Analysis Date Analyst 01/05/2022 1700 DAK

Prep Date

Batch 27195

		CAS	S Analytical	
	· · · ·			
į.	(100) Walkley-black	1 01	/03/2022 1700 DAK	2/13

Parameter	Number	Method	Result Q	LOQ	LOD	DL	Units Run
TOC		Walkley-Black	3400	200	100	98	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40%

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: STP1-SB0001-045.5-20211210

Matrix: Solid

Laboratory ID: WL14016-016

Project Name: KSC PFAS Date Sampled:12/10/2021 0815 % Solids: 74.5 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method **Analytical Method Dilution Analysis Date Analyst Prep Date Batch** 1 SOP SPE PFAS by ID SOP QSM B-15 12/19/2021 2353 JJG 12/17/2021 1218 25999 2 SOP SPE PFAS by ID SOP QSM B-15 12/27/2021 0253 NK1 12/23/2021 0934 26623 1

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS) 756426-58-1	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3.) 763051-92-9	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.3	U	2.6	1.3	0.65	ug/kg	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.6	U	5.1	2.6	1.3	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.3	U	2.5	1.3	0.63	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	0.65	U	1.3	0.65	0.25	ug/kg	1
Surrogate Q % R			Run 2 Ac Recovery	ceptance Limits	•				
13C2_4:2FTS		-150	105	50-150					
13C2_6:2FTS	85 50	-150	102	50-150					
13C2_8:2FTS	88 50	-150	105	50-150					
13C2_PFDoA	84 50	-150	92	50-150					
13C2_PFTeDA	86 50	-150	97	50-150					
13C3_PFBS	85 50	-150	99	50-150					
 13C3_PFHxS		-150	102	50-150					
		-150	102	50-150					
13C4_PFBA		-150	102	50-150					
		-150	99	50-150					
13C5_PFHxA		-150	101	50-150					
13C5_PFPeA		-150	97	50-150					
- -		-150	101	50-150					

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Date Sampled:12/10/2021 0815

Description: STP1-SB0001-045.5-20211210

Project Name: KSC PFAS

Laboratory ID: WL14016-016 Matrix: Solid

% Solids: 74.5 12/15/2021 0111

Date Received: 12/14/2021

Project Number: 112G09237

13C7_PFUdA 79 50-150 100 50-150
13C8_PFOA 85 50-150 100 50-150
13C8_PFOS 80 50-150 100 50-150
13C9_PFNA 78 50-150 98 50-150
d-EtFOSA 88 50-150 99 50-150
d5-EtFOSAA 82 50-150 102 50-150
d3-MeFOSAA 87 50-150 98 50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-017

Description: STP1-SB0001-049.5-20211210

Matrix: Solid

Date Sampled:12/10/2021 0820 Project Name: KSC PFAS % Solids: 77.0 12/16/2021 0210

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method

Analytical Method Dilution (TOC) Walkley-Black

Analysis Date Analyst 01/05/2022 1700 DAK

Prep Date

Batch 27195

	CAS	Analytical					
Parameter	Number	Method	Result Q	LOQ	LOD	DL	Units Run
TOC		Walkley-Black	3000	200	100	100	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-017

Description: STP1-SB0001-049.5-20211210

Date Sampled:12/10/2021 0820 Project Name: KSC PFAS % Solids: 77.0 12/16/2021 0210

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method Analytical Method Dilution **Analysis Date Analyst Prep Date Batch** 1 SOP SPE PFAS by ID SOP QSM B-15 12/20/2021 0004 JJG 12/17/2021 1218 25999 2 SOP SPE PFAS by ID SOP QSM B-15 12/27/2021 0331 NK1 12/23/2021 0934 26623 1

Parameter	CAS Number	Analytica Method		lt Q	LOQ	LOD	DL	Units F	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SC)P 1.1	U	2.2	1.1	0.56	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3) 763051-92-9	PFAS by ID SC	OP 1.1	U	2.2	1.1	0.56	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SC)P 1.1	U	2.2	1.1	0.56	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SC	OP 1.2	2 U	2.4	1.2	0.60	ug/kg	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SC)P 1.1	U	2.2	1.1	0.56	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SC)P 2.2	2 U	4.4	2.2	1.1	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SC)P 1.1	U	2.2	1.1	0.56	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SC)P 1.1	U	2.2	1.1	0.56	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SC)P 1.1	U	2.2	1.1	0.56	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SC)P 1.1	U	2.2	1.1	0.56	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SC		5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SC		5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SC	OP 0.55	5 U	1.1	0.55	0.22	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SC			1.1	0.55	0.22	ug/kg	1
	un 1 Accep	otance		Acceptan Limits	ce	0.00	0.22	0 0	
13C2_4:2FTS	66 50	-150	109	50-150)				
13C2_6:2FTS	72 50	-150	107	50-150)				
13C2_8:2FTS	72 50	-150	106	50-150)				
13C2_PFDoA	77 50	-150	104	50-150)				
13C2_PFTeDA	77 50	-150	104	50-150)				
13C3_PFBS	67 50	-150	105	50-150)				
13C3_PFHxS	72 50	-150	105	50-150)				
13C3-HFPO-DA	69 50	-150	104	50-150)				
13C4_PFBA	69 50	-150	103	50-150)				
13C4_PFHpA	67 50	-150	104	50-150)				
13C5_PFHxA	68 50	-150	104	50-150)				
1005 PED 4		4=0		=0.4=0					

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13C5_PFPeA

13C6_PFDA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

70

77

LOD = Limit of Detection

50-150

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

99

104

50-150

50-150

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: STP1-SB0001-049.5-20211210

Laboratory ID: **WL14016-017**

Matrix: Solid

Date Sampled:12/10/2021 0820 Project Name: KSC PFAS % Solids: 77.0 12/16/2021 0210

Date Received: 12/14/2021 Project Number: 112G09237

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 A % Recovery	Acceptance Limits
13C7_PFUdA		70	50-150		107	50-150
13C8_PFOA		71	50-150		102	50-150
13C8_PFOS		71	50-150		102	50-150
13C9_PFNA		68	50-150		102	50-150
d-EtFOSA		73	50-150		103	50-150
d5-EtFOSAA		72	50-150		105	50-150
d3-MeFOSAA		75	50-150		102	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-018

Description: STP1-SB0001-053.5-20211210

Matrix: Solid

Date Sampled:12/10/2021 0830

Project Name: KSC PFAS

% Solids: 76.2 12/15/2021 0111

Date Received: 12/14/2021

Project Number: 112G09237

Batch

Run Prep Method

Analytical Method Dilution (TOC) Walkley-Black

Analysis Date Analyst 01/05/2022 1700 DAK

Prep Date

27195

LOQ	LOD	DL	Units	Ru

Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units Run
TOC		Walkley-Black	3700	200	100	99	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL

D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Laboratory ID: WL14016-018

Matrix: Solid

Client: Tetra Tech

Description: STP1-SB0001-053.5-20211210

Date Sampled:12/10/2021 0830 Project Name: KSC PFAS % Solids: 76.2 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

 Run
 Prep Method
 Analytical Method
 Dilution
 Analysis Date
 Analyst
 Prep Date
 Batch

 1
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/20/2021 0014
 JJG
 12/17/2021 1218
 25999

 2
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/27/2021 0343
 NK1
 12/23/2021 0934
 26623

Parameter	CAS Number	Analytical Method	Result	ult Q LO		LOD	DL	Units	Ru
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3	763051-92-9	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.2	U	2.4	1.2	0.60	ug/kg	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.5	U	4.9	2.5	1.2	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.3	U	2.5	1.3	0.62	ug/kg	
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	0.60	U	1.2	0.60	0.25	ug/kg	
	un 1 Accel			ceptance	.				
			Recovery	Limits					
13C2_4:2FTS		150	113	50-150					
13C2_6:2FTS		1-150	95	50-150					
13C2_8:2FTS		1-150	99	50-150					
13C2_PFDoA		-150	95	50-150					
I3C2_PFTeDA		-150	94	50-150					
13C3_PFBS		-150	100	50-150					
I3C3_PFHxS		-150	97	50-150					
I3C3-HFPO-DA		-150	99	50-150					
I3C4_PFBA	89 50	-150	98	50-150					
I3C4_PFHpA		-150	100	50-150					
13C5_PFHxA	89 50	-150	101	50-150					
13C5_PFPeA	91 50	-150	96	50-150					
13C6_PFDA	87 50	-150	98	50-150					
DQ = Limit of Quantitation V = Detected in the method blank	C Overtitation	of compound exceeded			Detection Lir			= Surrogat	to fai

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Q = Out of holding time

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W = Reported on wet weight basis

LOD = Limit of Detection

D = Dilution > 1

Client: Tetra Tech

Laboratory ID: WL14016-018

Description: STP1-SB0001-053.5-20211210

Matrix: Solid

Date Sampled:12/10/2021 0830

d3-MeFOSAA

% Solids: 76.2 12/15/2021 0111

Date Received: 12/14/2021

Project Name: KSC PFAS Project Number: 112G09237

91

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 A % Recovery	cceptance Limits
13C7_PFUdA		79	50-150		96	50-150
13C8_PFOA		95	50-150		96	50-150
13C8_PFOS		88	50-150		96	50-150
13C9_PFNA		92	50-150		96	50-150
d-EtFOSA		98	50-150		98	50-150
d5-EtFOSAA		87	50-150		97	50-150

96

50-150

50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

N = Recovery is out of criteria W = Reported on wet weight basis

P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: **Tetra Tech**Laboratory ID: **WL14016-019**

Description: STP1-FB02-20211210

Date Sampled:12/10/2021 0835 Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237

Matrix: Aqueous

RunPrep MethodAnalytical MethodDilutionAnalysis DateAnalysis DatePrep DateBatch1SOP SPEPFAS by ID SOP QSM B-15112/21/2021 1658JJG12/20/2021 1123 26214

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
		otance nits							
		-150							
13C2_6:2FTS	96 50	-150							
13C2_8:2FTS	96 50	-150							
13C2_PFDoA	80 50	-150							
13C2_PFTeDA	75 50	-150							

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LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: STP1-FB02-20211210

Project Name: KSC PFAS

Date Sampled:12/10/2021 0835

Matrix: Aqueous

Laboratory ID: WL14016-019

Date Received: 12/14/2021

Project Number: 112G09237

Surrogate	Run 1 Q % Recovery	Acceptance Limits	
13C8_PFOA	100	50-150	
13C8_PFOS	100	50-150	
13C9_PFNA	103	50-150	
d-EtFOSA	87	50-150	
d5-EtFOSAA	82	50-150	
d3-MeFOSAA	91	50-150	

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

N = Recovery is out of criteria W = Reported on wet weight basis

P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: WL14016-020

Description: FS1-RB03-20211210

Date Sampled:12/10/2021 1000 Project Name: KSC PFAS Date Received: 12/14/2021 Project Number: 112G09237

Matrix: Aqueous

Run	Prep Method	Analytical Method Diluti	ion	Analysis Date Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP QSM B-15 1		12/21/2021 1708 JJG	12/20/2021 112	3 26214

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
		otance nits							
_		-150							
13C2_6:2FTS		-150							
13C2_8:2FTS	96 50	-150							
13C2_PFDoA	82 50	-150							
13C2_PFTeDA	82 50	-150							
13C3_PFBS	96 50	-150							
13C3_PFHxS	102 50	-150							
13C3-HFPO-DA	100 50	-150							
13C4_PFBA	96 50	-150							
13C4_PFHpA	102 50	-150							
13C5_PFHxA	100 50	-150							
13C5_PFPeA	99 50	-150							
13C6_PFDA	96 50	-150							
	00	100							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P =The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: FS1-RB03-20211210

Date Sampled:12/10/2021 1000

Laboratory ID: WL14016-020

Matrix: Aqueous

Date Received: 12/14/2021

Project Name: **KSC PFAS**Project Number: **112G09237**

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	95	50-150
13C8_PFOS	100	50-150
13C9_PFNA	100	50-150
d-EtFOSA	73	50-150
d5-EtFOSAA	87	50-150
d3-MeFOSAA	100	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*

Client: Tetra Tech

Laboratory ID: WL14016-021

Description: FS1-SB0001-013.5-20211210

Matrix: Solid

Date Sampled:12/10/2021 1200 Project Name: KSC PFAS % Solids: 77.0 12/15/2021 0111

Date Received: 12/14/2021

Project Number: 112G09237

Run Prep Method

TOC

Analytical Method Dilution (TOC) Walkley-Black

Analysis Date Analyst 01/06/2022 1550 DAK

Prep Date

Batch 27188

	CAS	Analyti
Parameter	Number	Metho

tical Result Q Method Number Walkley-Black 7400

LOQ LOD DL Units Run 400 200 mg/kg 200

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Laboratory ID: WL14016-021

Matrix: Solid

Client: Tetra Tech

Description: FS1-SB0001-013.5-20211210

Date Sampled:12/10/2021 1200 Project Name: KSC PFAS % Solids: 77.0 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method Analytical Method Dilution **Analysis Date Analyst Prep Date Batch** 1 SOP SPE PFAS by ID SOP QSM B-15 12/20/2021 0025 JJG 12/17/2021 1218 25999 2 SOP SPE PFAS by ID SOP QSM B-15 12/27/2021 0356 NK1 12/23/2021 0934 26623 1

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	1.1	U	2.2	1.1	0.55	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	1.1	U	2.2	1.1	0.55	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	2.6		2.2	1.1	0.55	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.2	U	2.4	1.2	0.60	ug/kg	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	1.1	U	2.2	1.1	0.55	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	2.2	U	4.4	2.2	1.1	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	1.1	U	2.2	1.1	0.55	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	1.1	U	2.2	1.1	0.55	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	1.1	U	2.2	1.1	0.55	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	1.1	U	2.2	1.1	0.55	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.53	I	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	0.37	I	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.58	I	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.28	I	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	0.57	I	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	4.6	V	1.1	0.55	0.22	ug/kg	1
			Run 2 Ac ecovery	ceptance Limits					
13C2_4:2FTS	90 50	-150	123	50-150					
13C2_6:2FTS	96 50	-150	119	50-150					
13C2_8:2FTS	94 50	-150	124	50-150					
13C2_PFDoA	90 50	-150	114	50-150					
13C2_PFTeDA	89 50	-150	116	50-150					
13C3_PFBS	86 50	-150	124	50-150					
13C3_PFHxS	93 50	-150	120	50-150					
13C3-HFPO-DA	86 50	-150	122	50-150					
13C4_PFBA	86 50	-150	117	50-150					
13C4_PFHpA	91 50	-150	118	50-150					
13C5_PFHxA	89 50	-150	119	50-150					
13C5_PFPeA	87 50	-150	118	50-150					

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

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U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Date Sampled:12/10/2021 1200

Description: FS1-SB0001-013.5-20211210

Project Name: KSC PFAS

Laboratory ID: WL14016-021

Matrix: Solid

% Solids: **77.0 12/15/2021 0111**

Date Received: 12/14/2021

Project Number: 112G09237

13C8_PFOA 93 50-150 116 50-150 13C8_PFOS 89 50-150 119 50-150 13C9_PFNA 86 50-150 116 50-150 d-EtFOSA 89 50-150 115 50-150 d5-EtFOSAA 85 50-150 119 50-150	Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C8_PFOS 89 50-150 119 50-150 13C9_PFNA 86 50-150 116 50-150 d-EtFOSA 89 50-150 115 50-150 d5-EtFOSAA 85 50-150 119 50-150	13C7_PFUdA		78	50-150		120	50-150
13C9_PFNA 86 50-150 116 50-150 d-EtFOSA 89 50-150 115 50-150 d5-EtFOSAA 85 50-150 119 50-150	13C8_PFOA		93	50-150		116	50-150
d-EtFOSAA 89 50-150 115 50-150 d5-EtFOSAA 85 50-150 119 50-150	13C8_PFOS		89	50-150		119	50-150
d5-EtFOSAA 85 50-150 119 50-150	13C9_PFNA		86	50-150		116	50-150
	d-EtFOSA		89	50-150		115	50-150
d3-MeFOSAA 91 50-150 120 50-150	d5-EtFOSAA		85	50-150		119	50-150
	d3-MeFOSAA		91	50-150		120	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*

Client: Tetra Tech

Laboratory ID: WL14016-022 Matrix: Solid

Description: FS1-SB0001-019.5-20211210

Date Sampled:12/10/2021 1205

Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237 % Solids: 78.8 12/15/2021 0111

Run Prep Method **Analytical Method Dilution** Analysis Date Analyst **Prep Date Batch**

(TOC) Walkley-Black 01/06/2022 1550 DAK 27188

Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units Run
TOC		Walkley-Black	4200	190	95	97	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-022

Description: FS1-SB0001-019.5-20211210

Date Sampled:12/10/2021 1205 Project Name: KSC PFAS % Solids: 78.8 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method Analytical Method Dilution **Analysis Date Analyst Prep Date Batch** 1 SOP SPE PFAS by ID SOP QSM B-15 12/20/2021 0036 JJG 12/17/2021 1218 25999 2 SOP SPE PFAS by ID SOP QSM B-15 12/27/2021 0409 NK1 12/23/2021 0934 26623 1

Parameter	CAS Number	Analytica Method		Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS	756426-58-1	PFAS by ID SC	DP 1.3	U	2.5	1.3	0.62	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3) 763051-92-9	PFAS by ID SC	DP 1.3	U	2.5	1.3	0.62	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID S	OP 4.4		2.5	1.3	0.62	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID S	OP 1.5	1	2.4	1.2	0.59	ug/kg	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SC	OP 1.3	U	2.5	1.3	0.62	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SC	OP 2.5	U	5.0	2.5	1.2	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SC	OP 1.3	U	2.5	1.3	0.62	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SC	OP 1.3	U	2.5	1.3	0.62	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SC	OP 1.3	U	2.5	1.3	0.62	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SC	OP 1.3	U	2.5	1.3	0.62	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID S	OP 2.2		1.2	0.60	0.25	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID S	OP 0.45	1	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID S	OP 0.61	1	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID S	OP 0.39	1	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID S	OP 0.86	1	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID S	OP 0.64	1	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SC	OP 0.60	U	1.2	0.60	0.25	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID S	OP 29	V	1.2	0.60	0.25	ug/kg	1
Surrogate Q % R		otance nits Q %	Run 2 Ac % Recovery	ceptance Limits					
13C2_4:2FTS	88 50	-150	96	50-150					
13C2_6:2FTS	94 50	-150	91	50-150					
13C2_8:2FTS	87 50	-150	96	50-150					
13C2_PFDoA	90 50	-150	89	50-150					
13C2_PFTeDA	93 50	-150	91	50-150					
13C3_PFBS	90 50	-150	99	50-150					
13C3_PFHxS	91 50	-150	95	50-150					
13C3-HFPO-DA	90 50	-150	97	50-150					
13C4_PFBA	87 50	-150	95	50-150					
13C4_PFHpA	87 50	-150	95	50-150					
13C5_PFHxA	93 50	-150	96	50-150					

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

96

94

50-150

50-150

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFPeA

13C6_PFDA

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93

89

Client: Tetra Tech

Description: FS1-SB0001-019.5-20211210

Laboratory ID: WL14016-022

Matrix: Solid

 Date Sampled:12/10/2021 1205
 Project Name: KSC PFAS
 % Solids: 78.8

% Solids: 78.8 12/15/2021 0111

Date Received: 12/14/2021

Project Number: 112G09237

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 A % Recovery	Acceptance Limits
13C7_PFUdA		87	50-150		97	50-150
13C8_PFOA		90	50-150		93	50-150
13C8_PFOS		90	50-150		92	50-150
13C9_PFNA		85	50-150		94	50-150
d-EtFOSA		93	50-150		97	50-150
d5-EtFOSAA		88	50-150		95	50-150
d3-MeFOSAA		88	50-150		96	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Date Sampled:12/10/2021 1210

Laboratory ID: WL14016-023

Description: FS1-SB0001-033.5-20211210

Project Name: KSC PFAS

Matrix: Solid

% Solids: 79.6 12/15/2021 0111

Date Received: 12/14/2021

Run Prep Method

Project Number: 112G09237

CAS

Prep Date

Batch

Analytical Method Dilution **Analysis Date Analyst** (TOC) Walkley-Black 01/06/2022 1550 DAK 27188

Parameter Number Method Result Q LOQ LOD DL Units Run TOC Walkley-Black 1200 200 100 mg/kg 98

Analytical

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-023

Description: FS1-SB0001-033.5-20211210

Date Sampled:12/10/2021 1210 Project Name: KSC PFAS % Solids: 79.6 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method Analytical Method Dilution **Analysis Date Analyst Prep Date Batch** 1 SOP SPE PFAS by ID SOP QSM B-15 12/20/2021 0046 JJG 12/17/2021 1218 25999 2 SOP SPE PFAS by ID SOP QSM B-15 12/27/2021 0421 NK1 12/23/2021 0934 26623 1

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SO	P 1.2	U	2.4	1.2	0.61	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3	.) 763051-92-9	PFAS by ID SO	P 1.2	U	2.4	1.2	0.61	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SC	OP 2.2	1	2.4	1.2	0.61	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SC	OP 4.6		2.5	1.3	0.62	ug/kg	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SO	P 1.2	U	2.4	1.2	0.61	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SO	P 2.5	U	4.9	2.5	1.2	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SO	P 1.2	U	2.4	1.2	0.61	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SO	P 1.2	U	2.4	1.2	0.61	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SO	P 1.2	U	2.4	1.2	0.61	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SO	P 1.2	U	2.4	1.2	0.61	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SC	OP 0.55	ı	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SO	P 0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SC	OP 0.91	ı	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SO	P 0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SC	OP 0.64	ı	1.2	0.60	0.24	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SC	OP 9.4		1.2	0.60	0.24	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SC	OP 0.34	ı	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SO	P 0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SO	P 0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SC		1	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SC	OP 2.1		1.2	0.60	0.24	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SO	P 0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SC	OP 1.5		1.2	0.60	0.24	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SC	OP 1.2		1.2	0.60	0.24	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SO	P 0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SO	P 0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SO	P 0.60	U	1.2	0.60	0.24	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SC	OP 110	V	1.2	0.60	0.24	ug/kg	1
		otance nits Q %	Run 2 Ac	ceptance Limits					
13C2_4:2FTS	86 50	-150	96	50-150					
13C2_6:2FTS	82 50	-150	93	50-150					
13C2_8:2FTS	89 50	-150	100	50-150					
13C2_PFDoA	90 50	-150	96	50-150					
13C2_PFTeDA	89 50	-150	94	50-150					
13C3_PFBS	85 50	-150	100	50-150					
13C3_PFHxS	84 50	-150	96	50-150					
13C3-HFPO-DA	82 50	-150	98	50-150					
13C4_PFBA	83 50	-150	98	50-150					
13C4_PFHpA	86 50	-150	98	50-150					
13C5_PFHxA	86 50	-150	98	50-150					

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13C5_PFPeA

13C6_PFDA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

86

80

LOD = Limit of Detection

50-150

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

98

96

50-150

50-150

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: FS1-SB0001-033.5-20211210

Laboratory ID: WL14016-023

Matrix: Solid

Date Sampled:12/10/2021 1210

Project Name: KSC PFAS

% Solids: **79.6 12/15/2021 0111**

Date Received: 12/14/2021

Project Number: 112G09237

Surrogate	Q %	Run 1 Recovery	Acceptance Limits	Q	Run 2 A % Recovery	cceptance Limits
13C7_PFUdA		78	50-150		98	50-150
13C8_PFOA		88	50-150		95	50-150
13C8_PFOS		81	50-150		93	50-150
13C9_PFNA		82	50-150		94	50-150
d-EtFOSA		79	50-150		93	50-150
d5-EtFOSAA		83	50-150		98	50-150
d3-MeFOSAA		87	50-150		96	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Client: Tetra Tech

Laboratory ID: WL14016-024

Description: FS1-SB0001-046.5-20211210

Matrix: Solid

Date Sampled:12/10/2021 1215

Project Name: KSC PFAS

% Solids: 82.9 12/15/2021 0111

Date Received: 12/14/2021

Project Number: 112G09237

Batch

Run Prep Method

TOC

Analytical Method (TOC) Walkley-Black

Dilution

Analysis Date Analyst 01/06/2022 1550 DAK

Prep Date

27188

	CAS	Analytical
Parameter	Number	Method

Result Q LOQ LOD DL Units Run d Walkley-Black 590 S 200 100 mg/kg 100

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-024

Description: FS1-SB0001-046.5-20211210

Date Sampled:12/10/2021 1215 Project Name: KSC PFAS % Solids: 82.9 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method Analytical Method Dilution **Analysis Date Analyst Prep Date Batch** 1 SOP SPE PFAS by ID SOP QSM B-15 12/20/2021 0057 JJG 12/17/2021 1218 25999 2 SOP SPE PFAS by ID SOP QSM B-15 12/27/2021 0434 NK1 12/23/2021 0934 26623 1

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS	5) 756426-58-1	PFAS by ID SOF	1.2	U	2.3	1.2	0.57	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3) 763051-92-9	PFAS by ID SOF	1.2	U	2.3	1.2	0.57	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOF	1.2	U	2.3	1.2	0.57	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOF	2 1.1	U	2.2	1.1	0.55	ug/kg	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOF	1.2	U	2.3	1.2	0.57	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOF	2.3	U	4.6	2.3	1.1	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOF	1.2	U	2.3	1.2	0.57	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOF	1.2	U	2.3	1.2	0.57	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOF	1.2	U	2.3	1.2	0.57	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOF	1.2	U	2.3	1.2	0.57	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SO	P 0.31	1	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOF	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SO	P 0.29	I	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOF	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SO	P 0.33	1	1.1	0.55	0.23	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SO	P 3.2		1.1	0.55	0.23	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOF	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOF	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOF	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOF	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SO	P 0.64	I	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOF	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SO	P 0.54	1	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SO	P 0.32	1	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOF	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOF	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOF	0.55	U	1.1	0.55	0.23	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SO	P 8.4	V	1.1	0.55	0.23	ug/kg	1
		otance nits Q %	Run 2 Ac Recovery	ceptance Limits					
13C2_4:2FTS	79 50	-150	97	50-150					
13C2_6:2FTS	91 50	-150	95	50-150					
13C2_8:2FTS	81 50	-150	98	50-150					
13C2_PFDoA	86 50	-150	88	50-150					
13C2_PFTeDA	90 50	-150	91	50-150					
13C3_PFBS	87 50	-150	100	50-150					
13C3_PFHxS	89 50	-150	96	50-150					
13C3-HFPO-DA	83 50	-150	99	50-150					
13C4_PFBA	84 50	-150	97	50-150					
13C4_PFHpA	83 50	-150	98	50-150					
13C5_PFHxA	82 50	-150	97	50-150					

Q = Out of holding time W = Reported on wet weight basis LOD = Limit of Detection

13C5_PFPeA

13C6_PFDA

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

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V = Detected in the method blank

N = Recovery is out of criteria

90

80

50-150

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

97

99

50-150

50-150

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Date Received: 12/14/2021

d3-MeFOSAA

Description: FS1-SB0001-046.5-20211210

Laboratory ID: WL14016-024

•

97

50-150

Date Sampled:12/10/2021 1215 Project Name: KSC PFAS

Matrix: Solid

Project Number: 112G09237

50-150

% Solids: 82.9 12/15/2021 0111

Run 1 **Acceptance** Run 2 **Acceptance** Surrogate % Recovery Q % Recovery Limits Limits 13C7_PFUdA 50-150 13C8_PFOA 86 50-150 95 50-150 13C8_PFOS 80 50-150 92 50-150 13C9_PFNA 81 50-150 93 50-150 d-EtFOSA 90 50-150 94 50-150 d5-EtFOSAA 84 98 50-150 50-150

87

 LOQ = Limit of Quantitation
 V = Detected in the method blank
 E = Quantitation of compound exceeded the calibration range
 DL = Detection Limit
 Q = Surrogate failure

 U = Not detected at or above the LOQ
 N = Recovery is out of criteria
 P = The RPD between two GC columns exceeds 40%
 I = Estimated result < LOQ and ≥ DL</td>
 L = LCS/LCSD failure

 Q = Out of holding time
 W = Reported on wet weight basis
 LOD = Limit of Detection
 D = Dilution > 1
 S = MS/MSD failure

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Client: Tetra Tech

Laboratory ID: WL14016-025

Description: FS1-SB0001-052.5-20211210

Matrix: Solid

Date Sampled:12/10/2021 1220 Project Name: KSC PFAS % Solids: 80.6 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method

Analytical Method Dilution (TOC) Walkley-Black

Analysis Date Analyst 01/06/2022 1550 DAK

Prep Date

Batch 27188

Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units Run
TOC		Walkley-Black	1300	200	100	98	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-025

Description: FS1-SB0001-052.5-20211210

Date Sampled:12/10/2021 1220 Project Name: KSC PFAS % Solids: 80.6 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

Run Prep Method Analytical Method Dilution **Analysis Date Analyst Prep Date Batch** 1 SOP SPE PFAS by ID SOP QSM B-15 12/20/2021 0107 JJG 12/17/2021 1218 25999 2 SOP SPE PFAS by ID SOP QSM B-15 12/29/2021 1224 MMM 12/28/2021 1304 26872 1

Parameter	CAS Number	•		Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID S	OP 1.1	U	2.2	1.1	0.55	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID S	OP 1.1	U	2.2	1.1	0.55	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID S	OP 1.1	U	2.2	1.1	0.55	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID S	OP 1.2	U	2.4	1.2	0.60	ug/kg	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID S	OP 1.1	U	2.2	1.1	0.55	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID S	OP 2.2	U	4.4	2.2	1.1	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID S	OP 1.1	U	2.2	1.1	0.55	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID S	OP 1.1	U	2.2	1.1	0.55	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID S	OP 1.1	U	2.2	1.1	0.55	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID S	OP 1.1	U	2.2	1.1	0.55	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID S	OP 0.55	U	1.1	0.55	0.22	ug/kg	1
Surrogate R Q % Re		eptance imits Q	Run 2 Ac % Recovery	ceptano Limits	e				
13C2_4:2FTS	76 5	0-150	107	50-150					
13C2_6:2FTS	80 5	0-150	114	50-150					
13C2_8:2FTS	79 5	0-150	114	50-150					
13C2_PFDoA	87 5	0-150	89	50-150					
13C2_PFTeDA	83 5	0-150	95	50-150					
13C3_PFBS	83 5	0-150	93	50-150					
13C3_PFHxS	82 5	0-150	92	50-150					
13C3-HFPO-DA	80 5	0-150	98	50-150					
13C4_PFBA	80 5	0-150	94	50-150					
13C4_PFHpA	85 5	0-150	93	50-150					
13C5_PFHxA	79 5	0-150	93	50-150					
13C5_PFPeA	84 5	0-150	89	50-150					
4000 PEDA	00 5	0.450	07	50.450					

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C6_PFDA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

82

LOD = Limit of Detection

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

87

50-150

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: FS1-SB0001-052.5-20211210

Laboratory ID: WL14016-025

Matrix: Solid

Date Sampled:12/10/2021 1220

Project Name: **KSC PFAS** % Solids: **80.6 12/15/2021 0111**

Date Received: 12/14/2021

Project Number: 112G09237

13C7_PFUdA 80 50-150 96 50-150 13C8_PFOA 84 50-150 96 50-150
13C8_PFOA 84 50-150 96 50-150
13C8_PFOS 78 50-150 93 50-150
13C9_PFNA 80 50-150 91 50-150
d-EtFOSA 86 50-150 98 50-150
d5-EtFOSAA 87 50-150 109 50-150
d3-MeFOSAA 84 50-150 97 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: WL14016-026

Description: FS1-SB0001-059.5-20211210

Matrix: Solid

Date Sampled:12/10/2021 1225

Project Name: KSC PFAS

% Solids: 85.2 12/15/2021 0111

Date Received: 12/14/2021

Project Number: 112G09237

Batch

Run Prep Method **Analytical Method Dilution**

(TOC) Walkley-Black

Analysis Date Analyst 01/06/2022 1550 DAK

Prep Date

27188

Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units Run
TOC		Walkley-Black	1300	200	100	100	mg/kg 1

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Solid

Client: Tetra Tech Laboratory ID: WL14016-026

Description: FS1-SB0001-059.5-20211210

Date Sampled:12/10/2021 1225 Project Name: KSC PFAS % Solids: 85.2 12/15/2021 0111

Date Received: 12/14/2021 Project Number: 112G09237

 Run
 Prep Method
 Analytical Method
 Dilution
 Analysis Date
 Analyst
 Prep Date
 Batch

 1
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/20/2021 0118
 JJG
 12/17/2021 1218
 25999

 2
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/29/2021 1234
 MMM
 12/28/2021 1304
 26872

Parameter	CAS Number	•		Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID S	OP 1.1	U	2.1	1.1	0.51	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID S	OP 1.1	U	2.1	1.1	0.51	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID S	OP 1.1	U	2.1	1.1	0.51	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID S	OP 1.1	U	2.2	1.1	0.55	ug/kg	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID S	OP 1.1	U	2.1	1.1	0.51	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID S	OP 2.1	U	4.1	2.1	1.0	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID S	OP 1.1	U	2.1	1.1	0.51	ug/kg	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID S	OP 1.1	U	2.1	1.1	0.51	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID S	OP 1.1	U	2.1	1.1	0.51	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID S	OP 1.1	U	2.1	1.1	0.51	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID S	OP 0.50	U	1.0	0.50	0.21	ug/kg	1
Surrogate R Q % Re		eptance imits Q	Run 2 Ac % Recovery	ceptance Limits					
13C2_4:2FTS	81 5	60-150	115	50-150					
13C2_6:2FTS	92 5	60-150	118	50-150					
13C2_8:2FTS	84 5	60-150	111	50-150					
13C2_PFDoA	91 5	60-150	97	50-150					
13C2_PFTeDA	88 5	0-150	95	50-150					
13C3_PFBS	87 5	0-150	91	50-150					
13C3_PFHxS	85 5	0-150	104	50-150					
13C3-HFPO-DA	83 5	0-150	99	50-150					
13C4_PFBA	82 5	0-150	95	50-150					
13C4_PFHpA	84 5	60-150	92	50-150					
13C5_PFHxA	84 5	60-150	89	50-150					
13C5_PFPeA	86 5	60-150	88	50-150					

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C6_PFDA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

80

LOD = Limit of Detection

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

90

50-150

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Date Sampled:12/10/2021 1225

Description: FS1-SB0001-059.5-20211210

Laboratory ID: WL14016-026

Matrix: Solid

% Solids: 85.2 12/15/2021 0111

Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C7_PFUdA		79	50-150		93	50-150
13C8_PFOA		85	50-150		98	50-150
13C8_PFOS		84	50-150		91	50-150
13C9_PFNA		86	50-150		96	50-150
d-EtFOSA		83	50-150		99	50-150
d5-EtFOSAA		80	50-150		108	50-150
d3-MeFOSAA		90	50-150		100	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P =The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: **Tetra Tech**Laboratory ID: **WL14016-027**

Description: FS1-FB03-20211210 Matrix: Aqueous

Date Sampled:12/10/2021 1230 Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237

 Run
 Prep Method
 Analytical Method
 Dilution
 Analysis Date
 Analyst
 Prep Date
 Batch

 1
 SOP SPE
 PFAS by ID SOP QSM B-15
 1
 12/21/2021 1719
 JJG
 12/20/2021 1123 26214

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Surrogate R		otance nits							
_		-150							
13C2_6:2FTS		-150							
13C2_8:2FTS	102 50	-150							
13C2_PFDoA	81 50	-150							
13C2_PFTeDA	75 50	-150							
13C3_PFBS	96 50	-150							
_	106 50	-150							
13C3-HFPO-DA	101 50	-150							
13C4_PFBA		-150							
13C4_PFHpA	100 50	-150							
13C5_PFHxA	105 50	-150							
13C5_PFPeA	100 50	-150							
13C6_PFDA	93 50	-150							
13C7_PFUdA	90 50	-150							

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Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P =The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

PFAS by LC/MS/MS

Client: Tetra Tech

Description: **FS1-FB03-20211210**

Date Sampled:12/10/2021 1230 Project Name: KSC PFAS

Date Received: 12/14/2021 Project Number: 112G09237

Laboratory ID: WL14016-027

Matrix: Aqueous

Surrogate Q		Acceptance Limits
13C8_PFOA	100	50-150
13C8_PFOS	102	50-150
13C9_PFNA	106	50-150
d-EtFOSA	78	50-150
d5-EtFOSAA	89	50-150
d3-MeFOSAA	92	50-150

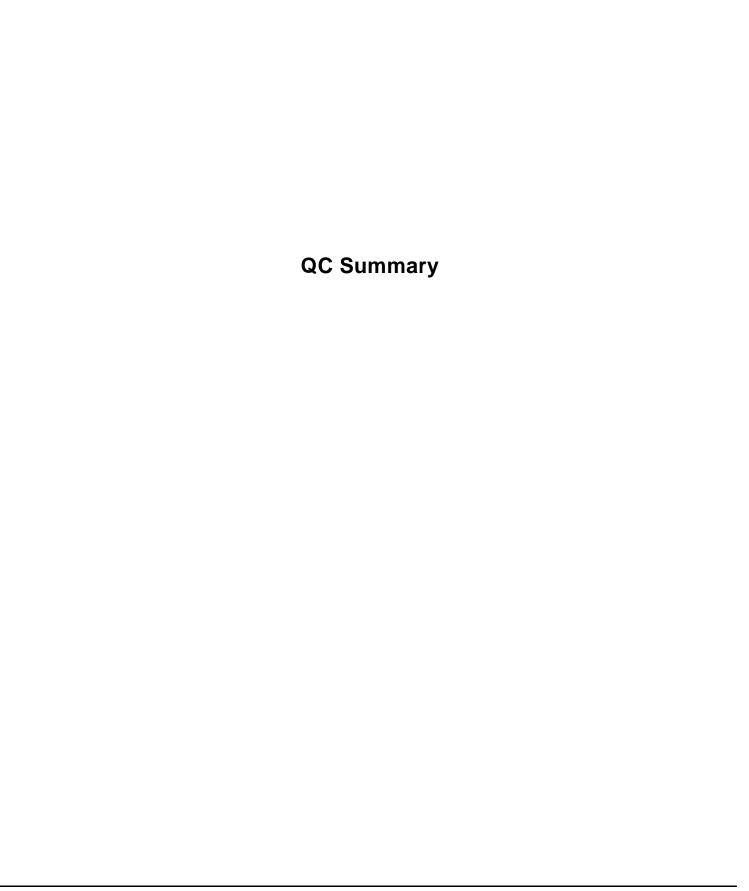
LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blankN = Recovery is out of criteriaW = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure



Inorganic non-metals - MB

Sample ID: XQ27188-001

Batch: 27188

Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
тос	100	U	1	200	100	100	mg/kg	01/06/2022 1550

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

Inorganic non-metals - LCS

Sample ID: XQ27188-002

Batch: 27188

Analytical Method: Walkley-Black

Matrix: Solid

	Spike Amount	Result				%Rec	
Parameter	(mg/kg)	(mg/kg)	Q	Dil	% Rec	Limit	Analysis Date
TOC	1000	1100		1	110	80-120	01/06/2022 1550

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

LOD = Limit of Detection

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Inorganic non-metals - MS

Sample ID: WL14016-024MS

Batch: 27188 Analytical Method: Walkley-Black Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	590	1000	1800		1	125	70-130	01/06/2022 1550

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

Inorganic non-metals - MSD

Sample ID: WL14016-024MD

Batch: 27188

Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
TOC	590	990	1900	N	1	133	3.8	70-130	20	01/06/2022 1550

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Inorganic non-metals - MB

Sample ID: XQ27195-001

Batch: 27195

Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
TOC	100	U	1	200	100	100	mg/kg	01/05/2022 1700

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

Inorganic non-metals - LCS

Sample ID: XQ27195-002

Batch: 27195

Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Spike Amount	Result	Q	D:I	% Rec	%Rec Limit	Analysis Date
Faranietei	(mg/kg)	(mg/kg)	Q	Dil	% Rec	Lillit	Alialysis Date
TOC	1000	1100		1	113	80-120	01/05/2022 1700

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Inorganic non-metals - MS

Sample ID: WL14016-004MS

Batch: 27195
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
тос	1500	960	2500		1	106	70-130	01/05/2022 1700

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Inorganic non-metals - MSD

Sample ID: WL14016-004MD

Batch: 27195
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg) Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Farailletei	(IIIg/kg)	(ilig/kg)	(mg/kg) Q	ווט	/0 NEC	/0 KFD	LIIIII	Limit	Allalysis Date
TOC	1500	990	2600	1	114	4 7	70-130	20	01/05/2022 1700

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

 $P = The \ RPD$ between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Inorganic non-metals - MS

Sample ID: WL14016-015MS

Batch: 27195
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	1500	1000	2600		1	114	70-130	01/05/2022 1700

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Inorganic non-metals - MSD

Sample ID: WL14016-015MD

Batch: 27195

Matrix: Solid

Analytical Method: Walkley-Black

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg) Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
TOC	1500	970	2600	1	114	1.1	70-130	20	01/05/2022 1700

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Sample ID: WQ25957-001

Batch: 25957

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Solid
Prep Method: SOP SPE

Prep Date: 12/16/2021 1855

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
9CI-PF3ONS	1.0	U	1	2.0	1.0	0.50	ug/kg	12/17/2021 1008
11CI-PF3OUdS	1.0	U	1	2.0	1.0	0.50	ug/kg	12/17/2021 1008
8:2 FTS	1.0	U	1	2.0	1.0	0.50	ug/kg	12/17/2021 1008
6:2 FTS	0.91	I	1	2.0	1.0	0.50	ug/kg	12/17/2021 1008
4:2 FTS	1.0	U	1	2.0	1.0	0.50	ug/kg	12/17/2021 1008
GenX	2.0	U	1	4.0	2.0	1.0	ug/kg	12/17/2021 1008
ADONA	1.0	U	1	2.0	1.0	0.50	ug/kg	12/17/2021 1008
EtFOSA	1.0	U	1	2.0	1.0	0.50	ug/kg	12/17/2021 1008
EtFOSAA	1.0	U	1	2.0	1.0	0.50	ug/kg	12/17/2021 1008
MeFOSAA	1.0	U	1	2.0	1.0	0.50	ug/kg	12/17/2021 1008
PFBS	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFDS	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFHpS	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFNS	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFPeS	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFHxS	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFBA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFDA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFDoA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFHpA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFHxA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFNA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFOA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFPeA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFTeDA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFTrDA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFUdA	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
PFOS	0.50	U	1	1.0	0.50	0.20	ug/kg	12/17/2021 1008
Surrogate	Q % F	Rec	Accep Lin	tance nit				
13C2_4:2FTS	89)	50-	150				
13C2_6:2FTS	10	1	50-	150				
13C2_8:2FTS	94	1	50-	150				
13C2_PFDoA	85	5	50-	150				
13C2_PFTeDA	79		50-	150				
13C3_PFBS	81	I	50-	150				
13C3_PFHxS	73		50-					
13C3-HFPO-DA	85	5	50-					
13C4_PFBA	78			150				
13C4_PFHpA	83		50-					
13C5_PFHxA	78		50-					
13C5_PFPeA	88			150				
		-						

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Sample ID: WQ25957-001

Batch: 25957

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Solid
Prep Method: SOP SPE

Prep Date: 12/16/2021 1855

Surrogate	Q % Rec	Acceptance Limit
13C6_PFDA	70	50-150
13C7_PFUdA	83	50-150
13C8_PFOA	79	50-150
13C8_PFOS	86	50-150
13C9_PFNA	78	50-150
d-EtFOSA	74	50-150
d5-EtFOSAA	84	50-150
d3-MeFOSAA	86	50-150

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

LOD = Limit of Detection

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WQ25957-002 Batch: 25957 Matrix: Solid
Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/16/2021 1855

	Spike					
Parameter	Amount	Result (ug/kg) Q	Dil	% Rec	%Rec Limit	Analysis Date
	(ug/kg)	, , , , , , , , , , , , , , , , , , , ,	Dil			•
9CI-PF3ONS	1.9	1.7	1	91	70-130	12/17/2021 1019
11CI-PF3OUdS	1.9	1.8	1	94	70-130	12/17/2021 1019
8:2 FTS	1.9	1.5	1	76	65-137	12/17/2021 1019
6:2 FTS	1.9	2.6	1	139	64-140	12/17/2021 1019
4:2 FTS	1.9	1.8	1	97	62-145	12/17/2021 1019
GenX	4.0	4.3	1	108	70-150	12/17/2021 1019
ADONA EtFOSA	1.9 2.0	2.0 2.1	1 1	105 107	70-130 70-150	12/17/2021 1019 12/17/2021 1019
EtFOSAA	2.0	2.0	1	102	61-139	12/17/2021 1019
MeFOSAA	2.0	1.8	1	92	63-144	12/17/2021 1019
PFBS	1.8	1.6	1	90	72-128	12/17/2021 1019
PFDS	1.9	1.8	1	96	59-134	12/17/2021 1019
PFHpS	1.9	2.4	1	125	70-132	12/17/2021 1019
PFNS	1.9	1.7	1	87	69-125	12/17/2021 1019
PFPeS	1.9	1.9	1	102	73-123	12/17/2021 1019
PFHxS	1.8	2.0	1	112	67-130	12/17/2021 1019
PFBA	2.0	1.9	1	96	71-135	12/17/2021 1019
PFDA	2.0	1.9	1	97	69-133	12/17/2021 1019
PFDoA	2.0	1.9	1	97	69-135	12/17/2021 1019
PFHpA	2.0	1.8	1	92	71-131	12/17/2021 1019
PFHxA	2.0	1.8	1	90	70-132	12/17/2021 1019
PFNA	2.0	2.1	1	106	72-129	12/17/2021 1019
PFOA	2.0	2.0	1	101	69-133	12/17/2021 1019
PFPeA	2.0	2.1	1	106	69-132	12/17/2021 1019
PFTeDA	2.0	1.9	1	96	69-133	12/17/2021 1019
PFTrDA	2.0	1.8	1	90	66-139	12/17/2021 1019
PFUdA	2.0	1.9	1	95	64-136	12/17/2021 1019
PFOS	1.9	1.7	1	91	68-136	12/17/2021 1019
Surrogate	Q % Rec	Acceptance Limit				
13C2_4:2FTS	87	50-150				
13C2_6:2FTS	99	50-150				
13C2_8:2FTS	93	50-150				
13C2_PFDoA	86	50-150				
13C2_PFTeDA	84	50-150				
13C3_PFBS	84	50-150				
13C3_PFHxS	71	50-150				
13C3-HFPO-DA	88	50-150				
13C4_PFBA	82	50-150				
13C4_PFHpA	87	50-150				
13C5_PFHxA	81	50-150				
13C5_PFPeA	87	50-150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WQ25957-002

Matrix: Solid Prep Method: SOP SPE Batch: 25957

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/16/2021 1855

Surrogate	Q % Rec	Acceptance Limit
13C6_PFDA	77	50-150
13C7_PFUdA	87	50-150
13C8_PFOA	78	50-150
13C8_PFOS	85	50-150
13C9_PFNA	80	50-150
d-EtFOSA	85	50-150
d5-EtFOSAA	82	50-150
d3-MeFOSAA	86	50-150

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit LOD = Limit of Detection I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WQ25999-001

Batch: 25999

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Solid
Prep Method: SOP SPE

Prep Date: 12/17/2021 1218

		Dil		LOD	DL	Units	Analysis Date
1.0	U	1	2.0	1.0	0.50	ug/kg	12/19/2021 2321
1.0	U	1	2.0	1.0	0.50	ug/kg	12/19/2021 2321
1.0	U	1	2.0	1.0	0.50	ug/kg	12/19/2021 2321
1.0	U	1	2.0	1.0	0.50	ug/kg	12/19/2021 2321
2.0	U	1	4.0	2.0	1.0	ug/kg	12/19/2021 2321
1.0	U	1	2.0	1.0	0.50	ug/kg	12/19/2021 2321
1.0	U	1	2.0	1.0	0.50	ug/kg	12/19/2021 2321
	U	1	2.0			ug/kg	12/19/2021 2321
	U	1	2.0			ug/kg	12/19/2021 2321
	U	1	1.0			ug/kg	12/19/2021 2321
	U	1	1.0			ug/kg	12/19/2021 2321
	U	1				ug/kg	12/19/2021 2321
		1					12/19/2021 2321
		1					12/19/2021 2321
		1					12/19/2021 2321
							12/19/2021 2321
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							12/19/2021 2321
							12/19/2021 2321
							12/19/2021 2321
							12/19/2021 2321
							12/19/2021 2321
0.57	ı			0.50	0.20	ug/kg	12/19/2021 2321
Q % R	ес						
82		50-	150				
95		50-	150				
86							
90		50-	150				
86		50-	150				
92		50-	150				
	1.0 1.0 1.0 1.0 2.0 1.0 1.0 1.0 1.0 0.50 0.50 0.50 0.50 0	1.0 U 1.0 U 1.0 U 2.0 U 1.0 U 1.0 U 1.0 U 1.0 U 1.0 U 0.50	1.0 U 1 0.50	1.0 U 1 2.0 1.0 U 1 2.0 1.0 U 1 2.0 2.0 U 1 4.0 1.0 U 1 2.0 0.50 U 1 1.0 0.50 U 1 5.0 0.5	1.0	1.0 U 1 2.0 1.0 0.50 1.0 U 1 2.0 1.0 0.50 1.0 U 1 2.0 1.0 0.50 2.0 U 1 4.0 2.0 1.0 0.50 1.0 U 1 2.0 1.0 0.50 0.50 U 1 1.0 0.50 0.20 0.50 U 1 1.0 0.50	1.0 U 1 2.0 1.0 0.50 ug/kg 2.0 U 1 4.0 2.0 1.0 0.50 ug/kg 1.0 U 1 2.0 1.0 0.50 ug/kg 0.50 U 1 1.0 0.50 0.20 ug/kg

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WQ25999-001

Matrix: Solid Prep Method: SOP SPE Batch: 25999

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/17/2021 1218

Surrogate	Q % Rec	Acceptance Limit
13C7_PFUdA	83	50-150
13C8_PFOA	90	50-150
13C8_PFOS	86	50-150
13C9_PFNA	84	50-150
d-EtFOSA	93	50-150
d5-EtFOSAA	88	50-150
d3-MeFOSAA	89	50-150

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit LOD = Limit of Detection I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WQ25999-002 Batch: 25999 Matrix: Solid
Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/17/2021 1218

Parameter	Spike Amount (ug/kg)	Result (ug/kg) Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	1.9	1.7	1	93	70-130	12/19/2021 2332
11CI-PF3OUdS	1.9	1.9	1	102	70-130	12/19/2021 2332
8:2 FTS	1.9	1.7	1	89	65-137	12/19/2021 2332
4:2 FTS	1.9	1.7	1	94	62-145	12/19/2021 2332
GenX	4.0	4.0	1	101	70-150	12/19/2021 2332
ADONA	1.9	1.8	1	94	70-130	12/19/2021 2332
EtFOSA	2.0	2.4	1	118	70-150	12/19/2021 2332
EtFOSAA	2.0	1.8	1	90	61-139	12/19/2021 2332
MeFOSAA	2.0	1.6	1	79	63-144	12/19/2021 2332
PFBS	1.8	1.6	1	88	72-128	12/19/2021 2332
PFDS	1.9	1.9	1	98	59-134	12/19/2021 2332
PFHpS	1.9	1.9	1	100	70-132	12/19/2021 2332
PFNS	1.9	1.8	1	91	69-125	12/19/2021 2332
PFPeS	1.9	1.6	1	84	73-123	12/19/2021 2332
PFHxS	1.8	1.7	1	94	67-130	12/19/2021 2332
PFBA	2.0	1.8	1	89	71-135	12/19/2021 2332
PFDA	2.0	1.7	1	86	69-133	12/19/2021 2332
PFDoA	2.0	1.7	1	84	69-135	12/19/2021 2332
PFHpA	2.0	1.9	1	94	71-131	12/19/2021 2332
PFHxA	2.0	1.9	1	95	70-132	12/19/2021 2332
PFNA	2.0	1.9	1	94	72-129	12/19/2021 2332
PFOA	2.0	1.7	1	87	69-133	12/19/2021 2332
PFPeA	2.0	2.0	1	99	69-132	12/19/2021 2332
PFTeDA	2.0	1.9	1	94	69-133	12/19/2021 2332
PFTrDA	2.0	1.9	1	93	66-139	12/19/2021 2332
PFUdA	2.0	1.7	1	87	64-136	12/19/2021 2332
PFOS	1.9	1.7	1	93	68-136	12/19/2021 2332
Surrogate	Q % Rec	Acceptance Limit				
13C2_4:2FTS	92	50-150				
13C2_6:2FTS	93	50-150				
13C2_8:2FTS	93	50-150				
13C2_PFDoA	91	50-150				
13C2_PFTeDA	95	50-150				
13C3_PFBS	89	50-150				
13C3_PFHxS	92	50-150				
13C3-HFPO-DA	88	50-150				
13C4_PFBA	88	50-150				
13C4_PFHpA	89	50-150				
13C5_PFHxA	87	50-150				
13C5_PFPeA		50-150				
	88					
13C6_PFDA	96	50-150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Sample ID: WQ25999-002

Matrix: Solid Prep Method: SOP SPE Batch: 25999

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/17/2021 1218

Surrogate	ogate Q % Rec			
13C7_PFUdA	81	50-150		
13C8_PFOA	90	50-150		
13C8_PFOS	84	50-150		
13C9_PFNA	83	50-150		
d-EtFOSA	87	50-150		
d5-EtFOSAA	91	50-150		
d3-MeFOSAA	89	50-150		

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

DL = Detection Limit I = Estimated result < LOQ and \geq DL P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

+ = RPD is out of criteria LOD = Limit of Detection * = RSD is out of criteria

Sample ID: WQ26214-001 **Batch:** 26214

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 12/20/2021 1123

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
9CI-PF3ONS	4.0	U	1	8.0	4.0	2.0	ng/L	12/21/2021 1533
11CI-PF3OUdS	4.0	U	1	8.0	4.0	2.0	ng/L	12/21/2021 1533
8:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	12/21/2021 1533
6:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	12/21/2021 1533
4:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	12/21/2021 1533
GenX	4.0	U	1	8.0	4.0	2.0	ng/L	12/21/2021 1533
ADONA	4.0	U	1	8.0	4.0	2.0	ng/L	12/21/2021 1533
EtFOSA	4.0	U	1	8.0	4.0	2.0	ng/L	12/21/2021 1533
EtFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	12/21/2021 1533
MeFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	12/21/2021 1533
PFBS	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFDS	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFHpS	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFNS	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFPeS	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFHxS	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFBA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFDA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFDoA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFHpA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFHxA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFNA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFOA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFPeA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFTeDA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFTrDA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFUdA	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
PFOS	2.0	U	1	4.0	2.0	1.0	ng/L	12/21/2021 1533
Surrogate	Q % R	ec	Accep Lin	tance nit				
13C2_4:2FTS	103	3		150				
13C2_6:2FTS	103	3	50-	150				
13C2_8:2FTS	10			150				
13C2_PFDoA	93			150				
13C2_PFTeDA	88		50-	150				
13C3_PFBS	98		50-	150				
13C3_PFHxS	107	7	50-	150				
13C3-HFPO-DA	102	2	50-	150				
13C4_PFBA	102	2	50-	150				
13C4_PFHpA	100)	50-	150				
			50	450				
13C5_PFHxA	106	Ó	50-	150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

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Sample ID: WQ26214-001

Matrix: Aqueous Prep Method: SOP SPE Batch: 26214

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/20/2021 1123

Surrogate	Q % Rec	Acceptance Limit
13C6_PFDA	105	50-150
13C7_PFUdA	98	50-150
13C8_PFOA	108	50-150
13C8_PFOS	106	50-150
13C9_PFNA	112	50-150
d-EtFOSA	94	50-150
d5-EtFOSAA	100	50-150
d3-MeFOSAA	100	50-150

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit LOD = Limit of Detection I = Estimated result < LOQ and \geq DL

 $P = The \ RPD$ between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WQ26214-002 **Batch:** 26214

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 12/20/2021 1123

Parameter	Spike Amount (ng/L)	Result (ng/L) Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	15	13	1	90	70-150	12/21/2021 1544
11CI-PF3OUdS	15	12	1	83	70-150	12/21/2021 1544
8:2 FTS	15	15	1	100	67-138	12/21/2021 1544
6:2 FTS	15	15	1	99	64-140	12/21/2021 1544
4:2 FTS	15	14	1	96	63-143	12/21/2021 1544
GenX	32	34	1	107	70-150	12/21/2021 1544
ADONA	15	15	1	103	70-150	12/21/2021 1544
EtFOSA	16	16	1	100	70-150	12/21/2021 1544
EtFOSAA	16	15	1	96	61-135	12/21/2021 1544
MeFOSAA	16	17	1	107	65-136	12/21/2021 1544
PFBS	14	12	1	87	72-130	12/21/2021 1544
PFDS	15	14	1	91	53-142	12/21/2021 1544
PFHpS	15	15	1	100	69-134	12/21/2021 1544
PFNS	15	14	1	89	69-127	12/21/2021 1544
PFPeS	15	14	1	91	71-127	12/21/2021 1544
PFHxS	15	14	1	100	68-131	12/21/2021 1544
PFBA	16	15	1	94	73-129	12/21/2021 1544
PFDA	16	14	1	90	71-129	12/21/2021 1544
PFDoA	16	16	1	97	72-134	12/21/2021 1544
PFHpA	16	15	1	93	72-130	12/21/2021 1544
PFHxA	16	15	1	96	72-129	12/21/2021 1544
PFNA	16	16	1	97	69-130	12/21/2021 1544
PFOA	16	14	1	88	71-133	12/21/2021 1544
PFPeA	16	15	1	96	72-129	12/21/2021 1544
PFTeDA	16	15	1	94	71-132	12/21/2021 1544
PFTrDA	16 16	14 15	1	91	65-144	12/21/2021 1544
PFUdA PFOS		14	1 1	91 97	69-133	12/21/2021 1544
PFU3	15		'	97	65-140	12/21/2021 1544
Surrogate	Q % Rec	Acceptance Limit				
13C2_4:2FTS	107	50-150				
13C2_6:2FTS	101	50-150				
13C2_8:2FTS	100	50-150				
13C2_PFDoA	93	50-150				
13C2_PFTeDA	82	50-150				
13C3_PFBS	98	50-150				
13C3_PFHxS	105	50-150				
13C3-HFPO-DA	100	50-150				
13C4_PFBA	104	50-150				
13C4_PFHpA	101	50-150				
13C5_PFHxA	104	50-150				
_						

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

 $P = The \ RPD$ between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WQ26214-002

Batch: 26214

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 12/20/2021 1123

Q % Rec	Acceptance Limit
109	50-150
102	50-150
104	50-150
107	50-150
107	50-150
92	50-150
91	50-150
99	50-150
	109 102 104 107 107 92 91

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

LOD = Limit of Detection

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WQ26623-001

Batch: 26623

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Solid
Prep Method: SOP SPE

Prep Date: 12/23/2021 0934

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
6:2 FTS	1.0	U	1	2.0	1.0	0.50	ug/kg	12/27/2021 0214
Surrogate	Q %	6 Rec	Accep Lin	tance nit				
13C2_4:2FTS		108	50-	150				
13C2_6:2FTS		105	50-	150				
13C2_8:2FTS		108	50-	150				
13C2_PFDoA		97	50-	150				
13C2_PFTeDA		101	50-	150				
13C3_PFBS		107	50-	150				
13C3_PFHxS		108	50-	150				
13C3-HFPO-DA		106	50-150					
13C4_PFBA		104	50-	150				
13C4_PFHpA		106	50-	150				
13C5_PFHxA		104	50-	150				
13C5_PFPeA		102	50-	150				
13C6_PFDA		104	50-	150				
13C7_PFUdA		103	50-	150				
13C8_PFOA		101	50-	150				
13C8_PFOS		103	50-	150				
13C9_PFNA		101	50-	150				
d-EtFOSA		100	50-	150				
d5-EtFOSAA		104	50-	150				
d3-MeFOSAA		102	50-	150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WQ26623-002

Batch: 26623

Matrix: Solid
Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/23/2021 0934

Parameter	Spike Amount (ug/kg)	Result (ug/kg) Q	Dil	% Rec	%Rec Limit	Analysis Date
6:2 FTS	1.9	2.0	1	104	64-140	12/27/2021 0227
Surrogate	Q % Rec	Acceptance Limit				
13C2_4:2FTS	99	50-150				
13C2_6:2FTS	95	50-150				
13C2_8:2FTS	96	50-150				
13C2_PFDoA	88	50-150				
13C2_PFTeDA	84	50-150				
13C3_PFBS	95	50-150				
13C3_PFHxS	95	50-150				
13C3-HFPO-DA	95	50-150				
13C4_PFBA	96	50-150				
13C4_PFHpA	93	50-150				
13C5_PFHxA	94	50-150				
13C5_PFPeA	92	50-150				
13C6_PFDA	91	50-150				
13C7_PFUdA	90	50-150				
13C8_PFOA	91	50-150				
13C8_PFOS	90	50-150				
13C9_PFNA	90	50-150				
d-EtFOSA	91	50-150				
d5-EtFOSAA	94	50-150				
d3-MeFOSAA	93	50-150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

LOD = Limit of Detection

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WL14016-016MS

Batch: 26623

Matrix: Solid
Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/23/2021 0934

Parameter	Sample Amount (ug/kg)		sult g/kg) Q	Dil	% Rec	%Rec Limit	Analysis Date
6:2 FTS	ND	2.2 2.3	}	1	103	64-140	12/27/2021 0305
Surrogate	Q % Rec	Acceptance Limit	•				
13C2_4:2FTS	102	50-150					
13C2_6:2FTS	100	50-150					
13C2_8:2FTS	98	50-150					
13C2_PFDoA	91	50-150					
13C2_PFTeDA	91	50-150					
13C3_PFBS	95	50-150					
13C3_PFHxS	99	50-150					
13C3-HFPO-DA	98	50-150					
13C4_PFBA	97	50-150					
13C4_PFHpA	96	50-150					
13C5_PFHxA	97	50-150					
13C5_PFPeA	95	50-150					
13C6_PFDA	95	50-150					
13C7_PFUdA	95	50-150					
13C8_PFOA	96	50-150					
13C8_PFOS	95	50-150					
13C9_PFNA	94	50-150					
d-EtFOSA	95	50-150					
d5-EtFOSAA	97	50-150					
d3-MeFOSAA	95	50-150					

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

 $P = The \ RPD$ between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Sample ID: WL14016-016MD

Batch: 26623

Matrix: Solid
Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/23/2021 0934

	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
6:2 FTS	ND	2.4	2.6		1	110	15	64-140	30	12/27/2021 0318
Surrogate	Q % Rec	Accep Lin								
13C2_4:2FTS	106	50-	150							
13C2_6:2FTS	100	50-	150							
13C2_8:2FTS	99	50-	150							
13C2_PFDoA	96	50-	150							
13C2_PFTeDA	94	50-	150							
13C3_PFBS	101	50-	150							
13C3_PFHxS	103	50-	150							
13C3-HFPO-DA	101	50-	150							
13C4_PFBA	101	50-	150							
13C4_PFHpA	99	50-	150							
13C5_PFHxA	98	50-	150							
13C5_PFPeA	97	50-	150							
13C6_PFDA	99	50-	150							
13C7_PFUdA	98	50-	150							
13C8_PFOA	96	50-	150							
13C8_PFOS	95	50-	150							
13C9_PFNA	96	50-	150							
d-EtFOSA	98	50-	150							
d5-EtFOSAA	98	50-	150							
d3-MeFOSAA	97	50-	150							

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Sample ID: WQ26872-001 **Batch:** 26872

Satch: 20072

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Solid
Prep Method: SOP SPE

Prep Date: 12/28/2021 1304

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
6:2 FTS	1.0	U	1	2.0	1.0	0.50	ug/kg	12/29/2021 1152
Surrogate	Q %	6 Rec	Accep Lin	tance nit				
13C2_4:2FTS		103	50-	150				
13C2_6:2FTS		116	50-	150				
13C2_8:2FTS		112	50-	150				
13C2_PFDoA		89	50-	150				
13C2_PFTeDA		90	50-	150				
13C3_PFBS		87	50-	150				
13C3_PFHxS		92	50-	150				
13C3-HFPO-DA		99	50-	150				
13C4_PFBA		92	50-	150				
13C4_PFHpA		91	50-	150				
13C5_PFHxA		92	50-	150				
13C5_PFPeA		87	50-	150				
13C6_PFDA		91	50-	150				
13C7_PFUdA		88	50-	150				
13C8_PFOA		95	50-	150				
13C8_PFOS		84	50-	150				
13C9_PFNA		93	50-	150				
d-EtFOSA		103	50-	150				
d5-EtFOSAA		109	50-	150				
d3-MeFOSAA		100	50-	150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

Sample ID: WQ26872-002 Batch: 26872 Matrix: Solid
Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/28/2021 1304

Parameter	Spike Amount (ug/kg)	Result (ug/kg) Q	Dil	% Rec	%Rec Limit	Analysis Date
6:2 FTS	1.9	2.2	1	117	64-140	12/29/2021 1202
Surrogate	Q % Rec	Acceptance Limit				
13C2_4:2FTS	108	50-150				
13C2_6:2FTS	117	50-150				
13C2_8:2FTS	118	50-150				
13C2_PFDoA	85	50-150				
13C2_PFTeDA	90	50-150				
13C3_PFBS	92	50-150				
13C3_PFHxS	98	50-150				
13C3-HFPO-DA	100	50-150				
13C4_PFBA	94	50-150				
13C4_PFHpA	90	50-150				
13C5_PFHxA	93	50-150				
13C5_PFPeA	90	50-150				
13C6_PFDA	91	50-150				
13C7_PFUdA	90	50-150				
13C8_PFOA	94	50-150				
13C8_PFOS	90	50-150				
13C9_PFNA	91	50-150				
d-EtFOSA	89	50-150				
d5-EtFOSAA	107	50-150				
d3-MeFOSAA	95	50-150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria + = RPD is out of criteria

Sample ID: WQ26872-003

Batch: 26872

Matrix: Solid
Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 12/28/2021 1304

Parameter	Spike Amount (ug/kg)	Result (ug/kg) Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
6:2 FTS	1.9	1.9	1	100	16	64-140	30	12/29/2021 1213
Surrogate	Q % Rec	Acceptance Limit						
13C2_4:2FTS	114	50-150						
13C2_6:2FTS	115	50-150						
13C2_8:2FTS	109	50-150						
13C2_PFDoA	91	50-150						
13C2_PFTeDA	96	50-150						
13C3_PFBS	91	50-150						
13C3_PFHxS	94	50-150						
13C3-HFPO-DA	100	50-150						
13C4_PFBA	95	50-150						
13C4_PFHpA	94	50-150						
13C5_PFHxA	92	50-150						
13C5_PFPeA	91	50-150						
13C6_PFDA	89	50-150						
13C7_PFUdA	94	50-150						
13C8_PFOA	98	50-150						
13C8_PFOS	90	50-150						
13C9_PFNA	92	50-150						
d-EtFOSA	108	50-150						
d5-EtFOSAA	107	50-150						
d3-MeFOSAA	109	50-150						

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

 $P = The \ RPD$ between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria + = RPD is out of criteria

Chain of Custody and Miscellaneous Documents

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client Tetra Tech	3	Megni H ISlovel F	Project Name KSC PFAS Suplay	Properties (12C-09237	Sample ID / Discorption (Containers for seab sample may be combined on one fam.)	PS3- RB61-22211269	FS3-5B0001-0115-20211209	FS3-5 Beerl-02555- 2021 (209)	FS3-5BCNI-03855-2641209	1853-58001-0555-2021 1209	FS3-5801-059,5-20-11209	PS3-58-61-070-5- 2021 12-09	F53-1-202-1208-1-203	Sw801- 2041209	Sw8 = 2 - 20211209	Turn Arouge Time Required (Plantak approval required for expedited (IRL). Stanges Disposant Xecondard — Rush (Specify)	i. Ferendalisted Ch	2. Relinylated by	3. Resimplicated by	4. Rainquiehed by	Note: All samples are

PACE		106 Vantage
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PACE ANALYTICAL SERVICES, LLC

106 Vantage Point Drive • West Columbia, SC 29172 Telephone No. 803-791-9700 Fax No. 803-791-9111 www.pacelabs.com

Number 128113

Charl Tetra Tech	Report to Contact Colognal Telephone, No. / Eme	591-758c
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STP 1 - SBOW - 029.5 - 20,21209 12/9/21	X X X X 3 01.01	
5101-5BONG1-6435-2211218 17/16/12	X X X X 9 018 17	
STP1-56041-01475-2011210 12/19/21	× 0 × 0	
5701-58061-849.5-2021210 12/16/21	21 820 C X X	
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Note: All samples are retained for four weeks from receipt unless other arrangements are made.	Becalved on the Chitch Year No top Back	Benefit Town 7 C Tenp Block 2 Y T.N.

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Pace Analytical"	PACE ANALYTICAL SERVICES, LLC 106 Vantage Point Drive • West Columbia, SC 29172 Telephone No. 808-791-9700 Fax No. 803-791-9111 www.pacelebs.com		Number	128115
chan Tetra Tech	Appendiction of Surgar	76 Sphore No. / Equal 991 - 7580	2	Queto No.
Address 353 N. Courteney Phuy Ste S	Sample Senaure	sis (Attach Tist II.)		Pageof
Meritzland Fi 32953	Printed Name	D-8		ALTERNA A CONTAINE
HOPERINDE (KSC PEH Sounding	Soft ALLISM / Sue Roger	₹7°°		VAL 44048
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Sample 10 / Description Colonio (Contables tot each sample may be combined on one law.) Sample	Sold Sold Sold Sold Sold Sold Sold Sold	M.		Remarks / Oxolor (D.
FS1-5Barri-013.5- 20211210 12/10/21	17.08 G X	XX		
[551 - 58441 - 019.5 - 2021 1210 15/10/21	1205 G X X	×		
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FSI-580WI-0925-2021 126 12/12/21	1220 G X X	X Y		
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Turn Around Time Required (Prior lab approval required for expendited PAT). Sample Disposal XStandard Rush (Specify).	Sample Disposed Posnible flazard Identification Related to Older X X Squass by Leb 1.1 Nur-Heard 1.1 Flamment	Prof. Continued O Patents O University	OS Requirements (Spootb)	Mose
L. Robert Land Co. L.	13/1621 They Sell 1. Decelor Buy		Date / Time	
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4. Resimpuished by FC d-CK	TOWN A LAW THOUGH DY	triplus	Dang Ding	Unol
Note: All samples are relained for four weeks from receipt unless other arrangements are made.	LAB USE ONLY Received on size (Ovole)	Receipt Terms.		Tomp Blank C. V. O. N

PACE ANALYTICAL SERVICES, LLC



Samples Receipt Checklist (SRC) (ME0018C-15) Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020 Page 1 of 1

Sample Receipt Checklist (SRC)

Triber (1)	The receipt Checkist (SKC)
Client: Tetra Tech	Cooler Inspected by/date: JRG2 / 12/14/2021 Lot #: WL14016
Means of receipt:	Pace Client UPS / FedEx Other:
	Were custody seals present on the cooler?
pH Strip ID: NA	NA 2. If custody seals were present, were they intact and unbroken?
	Chlorine Strip ID: NA Tested by: NA pon receipt / Derived (Corrected) temperature upon receipt
2.4 /2.4 PC NA	/NA °C NA /NA °C NA /NA °C NA /NA °C NA /NA °C
Method: 🗸 Temperatu	re Blant.
Method of coolant:	Wet Icc L lice Packs Dry Ice None
Yes No No	2 18 to
	TW was Notified by: phone / email / face-to-face (circle one)
Yes No N	AA 4. Is the commercial courier's packing slip attached to this form?
17 7 405 - 1140	 Were proper custody procedures (relinquished/received) followed?
✓ Yes □ No	6. Were sample IDs listed on the COC?
✓ Yes No	7. Were sample IDs listed on all sample containers?
✓ Yes No	8. Was collection date & time listed on the COC?
✓ Yes No	9. Was collection date & time listed on all sample containers? 10. Did all containers?
✓ Yes No	10. Did all container label information (ID, date, time) agree with the COC?
	11. Were tests to be performed listed on the COC?
☑ Yes ☐ No	12. Did all samples arrive in the proper containers for each test and/or in good condition
✓ Yes No	(market, i.e. or, etc.);
✓ Yes ☐ No	13. Was adequate sample volume available?
Yes V No	14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
	and the samples containers missing/excess (circle one) care land to the first
Yes No No	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (½"or 6mm in diameter) in any of the VOA vials?
Yes No VN	A 17. Were all DRO/metals/nutrient samples received at a pH of < 2?
Yes No V	1 to, were all cyanide samples received at a pH > 12 and outed
Yes No No	The second of th
	residual elliotine;
☐ Yes ☐ No ☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc)
Ves No	The state of the state of the comment section in LIMS9
	[21] Was the quote number listed on the container label? If yes, Quote # 24582
Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)
sample(s)	were received incorrectly preserved and warm of the last
in sample receiving with Firme of preservation NA	The state of the s
	If more than one preservative is needed, please note in the comments below.
Sample(s) NA	were received with bubbles >6 mm in diameter.
samples(s) NA	
idjusted accordingly in sa	were received with TRC > 0.5 mg/L (1f #19 is $n\sigma$) and were mple receiving with sodium thiosulfate (Na ₂ S ₂ O ₃) with Shealy ID: NA
R barcode labels applied	CDD
	by: CB1 Date: 12/14/2021
omments:	



Report of Analysis

Tetra Tech

Foster Plaza 7 661 Anderson Drive Pittsburgh, PA 15220 Attention: Mark Jonnet

Project Name: KSC-FS1

Project Number: 112G09581

Lot Number: XB16023

Date Completed:03/13/2022

Kathy Smith

03/14/2022 10:09 AM Approved and released by: Project Manager II: **Kathy E. Smith**





The electronic signature above is the equivalent of a handwritten signature.

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SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

Case Narrative Tetra Tech Lot Number: XB16023

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the Pace Quality Assurance Management Plan (QAMP), applicable Shealy standard operating procedures (SOPs), the 2003 NELAC standard, and Shealy policies. Additionally, the DoD QSM version 5.3 has been followed for these samples, and specifically Table B-15 was followed for all PFAS samples. Any exceptions to the QAMP, SOPs, NELAC standards, the DoD QSM, or policies are qualified on the results page or discussed below.

All QC associated with these samples was in compliance with DOD QSM 5.3 table B-15 and our PFAS SOP.

Correction factors (CF) are used to calculate the original sample concentration. The CF is the inverse of the concentration factor (sample volume / extract final volume) times the dilution factor (DF). For undiluted analysis. For undiluted analysis, the extract is prepared for injection by adding 182 uL of sample extract + 8 uL of reagent water + 10 uL of internal standard solution to a polypropylene autosampler vial. An extra correction factor of 0.91 (182 uL / 200 uL = 0.91) applies. The CF is calculated as follows:

CF = DF * FV / Vo

FV is volume of extract (mL)
Vo is initial sample volume (mL)
DF is dilution factor. For undiluted analysis, DF = 1/0.91.

Sample concentration for aqueous samples: Concentration (ng/L) = Cs*CF,

$$C_{s} = \frac{\left(\frac{(A_{s} \times C_{is})}{A_{is}}\right) - B}{M1}$$

Where

C_s is on column concentration of target analyte in the sample (ng/L)
C_{is} is concentration of internal standard in the sample (ng/L)
A_s is peak response of target analyte in the sample
A_{is} is peak response of internal standard in the sample
M1 is the average RF from ICAL or the slope from linear regression ICAL
B is the y-intercept from the ICAL

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Samples XB16023-001, XB16023-002, XB16023-003, XB16023-004, XB16023-005, XB16023-006, XB16023-007, XB16023-008, XB16023-009, XB16023-010, XB16023-011, XB16023-012, XB16023-014, XB16023-016, XB16023-017, XB16023-018, XB16023-019, XB16023-020, XB16023-025, XB16023-026, XB16023-027, XB16023-028, XB16023-032, XB16023-033, XB16023-034, XB16023-035, XB16023-036, XB16023-038 required centrifugation prior to extraction, due to excessive solids present in the samples. Centrifugation was performed following the PFAS Aqueous Centrifuge Protocol; samples were spiked with Surrogate (SUR; Extracted Internal Standard/EIS) and shaken vigorously before being poured into a conical bottle and centrifuged. The centrifuged aqueous sample was decanted back into the original sample bottle, off of the condensed solids remaining in the centrifuge bottle. Original sample bottle was rinsed as normal and centrifuge bottle was rinsed with 4mL of MeOH. Centrifuge bottle rinsate was added to the elution. Samples concentrated to <10mL and reconstituted to 10mL using MeOH by transfer pipet.

Surrogate recovery for the following samples was outside control limits: XB16023-001, XB16023-002, XB16023-003, XB16023-004, XB16023-005, XB16023-006, XB16023-007, XB16023-008, XB16023-009, XB16023-010, XB16023-011, XB16023-012, XB16023-014, XB16023-016, XB16023-017, XB16023-018, XB16023-019, XB16023-020, XB16023-025, XB16023-026, XB16023-027, XB16023-028, XB16023-032, XB16023-033, XB16023-034, XB16023-036, XB16023-038. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The MS/MSD associated with sample XB16023-019 had analytes recovered outside of the acceptance limits. The LCS was recovered within the required acceptance limits; therefore, this demonstrates a matrix effect and data quality is not impacted.

Sample Summary

Tetra Tech Lot Number: XB16023

Project Name: KSC-FS1 Project Number: 112G09581

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	FS1-DPT0001-005.0-20220214	Aqueous	02/14/2022 1010	02/16/2022
002	FS1-DPT0001-012.0-20220214	Aqueous	02/14/2022 1030	02/16/2022
003	FS1-DPT0001-017.0-20220214	Aqueous	02/14/2022 1050	02/16/2022
004	FS1-DPT0001-025.0-20220214	Aqueous	02/14/2022 1115	02/16/2022
005	FS1-DPT0001-035.0-20220214	Aqueous	02/14/2022 1140	02/16/2022
006	FS1-DPT0001-045.0-20220214	Aqueous	02/14/2022 1230	02/16/2022
007	FS1-DPT0002-006.0-20220214	Aqueous	02/14/2022 1335	02/16/2022
800	FS1-DPT0002-012.0-20220214	Aqueous	02/14/2022 1400	02/16/2022
009	FS1-DPT0002-017.0-20220214	Aqueous	02/14/2022 1430	02/16/2022
010	FS1-DPT0002-025.0-20220214	Aqueous	02/14/2022 1500	02/16/2022
011	FS1-DPT0002-035.0-20220214	Aqueous	02/14/2022 1525	02/16/2022
012	FS1-DPT0002-045.0-20220214	Aqueous	02/14/2022 1555	02/16/2022
013	FS1-FB-20220215-01	Aqueous	02/15/2022 0705	02/16/2022
014	FS1-DPT0003-005.0-20220215	Aqueous	02/15/2022 0720	02/16/2022
015	FS1-EB-20220215-01	Aqueous	02/15/2022 0730	02/16/2022
016	FS1-DPT0003-012.0-20220215	Aqueous	02/15/2022 0740	02/16/2022
017	FS1-DPT0003-017.0-20220215	Aqueous	02/15/2022 0800	02/16/2022
018	FS1-DPT0003-025.0-20220215	Aqueous	02/15/2022 0825	02/16/2022
019	FS1-DPT0003-035.0-20220215	Aqueous	02/15/2022 0855	02/16/2022
020	FS1-DPT0003-045.0-20220215	Aqueous	02/15/2022 0925	02/16/2022
021	FS1-EB-20220215-02	Aqueous	02/15/2022 1000	02/16/2022
022	FS1-DPT0004-005.0-20220215	Aqueous	02/15/2022 1035	02/16/2022
023	FS1-DPT0004-012.0-20220215	Aqueous	02/15/2022 1055	02/16/2022
024	FS1-FB-20220215-02	Aqueous	02/15/2022 1110	02/16/2022
025	FS1-DPT0004-017.0-20220215	Aqueous	02/15/2022 1115	02/16/2022
026	FS1-DPT0004-025.0-20220215	Aqueous	02/15/2022 1140	02/16/2022
027	FS1-DPT0004-035.0-20220215	Aqueous	02/15/2022 1205	02/16/2022
028	FS1-DPT0004-045.0-20220215	Aqueous	02/15/2022 1230	02/16/2022
029	FS1-DPT0005-005.0-20220215	Aqueous	02/15/2022 1335	02/16/2022
030	FS1-DPT0005-012.0-20220215	Aqueous	02/15/2022 1355	02/16/2022
031	FS1-DPT0005-017.0-20220215	Aqueous	02/15/2022 1415	02/16/2022
032	FS1-DPT0005-025.0-20220215	Aqueous	02/15/2022 1435	02/16/2022
033	FS1-DPT0005-035.0-20220215	Aqueous	02/15/2022 1500	02/16/2022
034	FS1-DPT0005-045.0-20220215	Aqueous	02/15/2022 1530	02/16/2022
035	FS1-EB-20220215-03	Aqueous	02/15/2022 1540	02/16/2022
036	FS1-FD-20220215-01	Aqueous	02/15/2022	02/16/2022
037	FS1-FD-20220215-02	Aqueous	02/15/2022	02/16/2022
038	FS1-FD-20220215-03	Aqueous	02/15/2022	02/16/2022

(38 samples)

Detection Summary Tetra Tech

Lot Number: XB16023 Project Name: KSC-FS1

Project Number: 112G09581

Sampl	e Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	FS1-DPT0001-005.0-20220214	Aqueous	PFHxS	PFAS by ID	2.8	I	ng/L	13
001	FS1-DPT0001-005.0-20220214	Aqueous	PFBA	PFAS by ID	5.0		ng/L	13
001	FS1-DPT0001-005.0-20220214	Aqueous	PFHxA	PFAS by ID	1.4	I	ng/L	13
001	FS1-DPT0001-005.0-20220214	Aqueous	PFOA	PFAS by ID	2.9	1	ng/L	13
001	FS1-DPT0001-005.0-20220214	Aqueous	PFOS	PFAS by ID	13		ng/L	13
002	FS1-DPT0001-012.0-20220214	Aqueous	PFBS	PFAS by ID	1.9	1	ng/L	15
002	FS1-DPT0001-012.0-20220214	Aqueous	PFHpS	PFAS by ID	3.0	I	ng/L	15
002	FS1-DPT0001-012.0-20220214	Aqueous	PFPeS	PFAS by ID	1.8	1	ng/L	15
002	FS1-DPT0001-012.0-20220214	Aqueous	PFHxS	PFAS by ID	16		ng/L	15
002	FS1-DPT0001-012.0-20220214	Aqueous	PFBA	PFAS by ID	9.8	Q	ng/L	15
002	FS1-DPT0001-012.0-20220214	Aqueous	PFHpA	PFAS by ID	3.5	ı	ng/L	15
002	FS1-DPT0001-012.0-20220214	Aqueous	PFHxA	PFAS by ID	3.8		ng/L	15
002	FS1-DPT0001-012.0-20220214	Aqueous	PFOA	PFAS by ID	21		ng/L	15
002	FS1-DPT0001-012.0-20220214	Aqueous	PFPeA	PFAS by ID	4.4		ng/L	15
002	FS1-DPT0001-012.0-20220214	Aqueous	PFOS	PFAS by ID	9.6		ng/L	15
003	FS1-DPT0001-017.0-20220214	Aqueous	PFBS	PFAS by ID	2.8	ı	ng/L	17
003	FS1-DPT0001-017.0-20220214	Aqueous		PFAS by ID	1.3	I	ng/L	17
003	FS1-DPT0001-017.0-20220214	Aqueous	PFPeS	PFAS by ID	1.8	ı	ng/L	17
003	FS1-DPT0001-017.0-20220214	Aqueous		PFAS by ID	21		ng/L	17
003	FS1-DPT0001-017.0-20220214	Aqueous	PFBA	PFAS by ID	9.1	Q	ng/L	17
003	FS1-DPT0001-017.0-20220214	Aqueous	PFHpA	PFAS by ID	5.3		ng/L	17
003	FS1-DPT0001-017.0-20220214	Aqueous	PFHxA	PFAS by ID	5.5		ng/L	17
003	FS1-DPT0001-017.0-20220214	Aqueous		PFAS by ID	28		ng/L	17
003	FS1-DPT0001-017.0-20220214	Aqueous	PFPeA	PFAS by ID	5.9		ng/L	17
004	FS1-DPT0001-025.0-20220214	Aqueous	PFBS	PFAS by ID	5.7		ng/L	19
004	FS1-DPT0001-025.0-20220214	Aqueous		PFAS by ID	6.6		ng/L	19
004	FS1-DPT0001-025.0-20220214	Aqueous		PFAS by ID	41		ng/L	19
004	FS1-DPT0001-025.0-20220214	Aqueous		PFAS by ID	3.7	Q	ng/L	19
004	FS1-DPT0001-025.0-20220214	Aqueous	PFHpA	PFAS by ID	4.5		ng/L	19
004	FS1-DPT0001-025.0-20220214	Aqueous	PFHxA	PFAS by ID	7.7		ng/L	19
004	FS1-DPT0001-025.0-20220214	Aqueous		PFAS by ID	5.0		ng/L	19
004	FS1-DPT0001-025.0-20220214	Aqueous	PFPeA	PFAS by ID	6.6		ng/L	19
005	FS1-DPT0001-035.0-20220214	Aqueous	6:2 FTS	PFAS by ID	14		ng/L	21
005	FS1-DPT0001-035.0-20220214	Aqueous	PFBS	PFAS by ID	3.3	I	ng/L	21
005	FS1-DPT0001-035.0-20220214	Aqueous	PFHpS	PFAS by ID	1.1	ı	ng/L	21
005	FS1-DPT0001-035.0-20220214	Aqueous	PFPeS	PFAS by ID	3.0	I	ng/L	21
005	FS1-DPT0001-035.0-20220214	Aqueous	PFHxS	PFAS by ID	24		ng/L	21
005	FS1-DPT0001-035.0-20220214	Aqueous		PFAS by ID	11	Q	ng/L	21
005	FS1-DPT0001-035.0-20220214	Aqueous		PFAS by ID	5.1		ng/L	21
005	FS1-DPT0001-035.0-20220214	Aqueous	•	PFAS by ID	9.9		ng/L	21
005	FS1-DPT0001-035.0-20220214	Aqueous		PFAS by ID	12		ng/L	21
005	FS1-DPT0001-035.0-20220214	Aqueous		PFAS by ID	11		ng/L	21
005	FS1-DPT0001-035.0-20220214	Aqueous		PFAS by ID	10		ng/L	21
		1		· · · , · -			<i>3</i> . –	

Detection Summary (Continued)

Lot Number: XB16023

Sampl	le Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
006	FS1-DPT0001-045.0-20220214	Aqueous	PFBS	PFAS by ID	0.98	ı	ng/L	23
006	FS1-DPT0001-045.0-20220214	Aqueous		PFAS by ID	1.8	ı	ng/L	23
006	FS1-DPT0001-045.0-20220214	Aqueous		PFAS by ID	8.9		ng/L	23
006	FS1-DPT0001-045.0-20220214	Aqueous		PFAS by ID	4.1	Q	ng/L	23
006	FS1-DPT0001-045.0-20220214	Aqueous		PFAS by ID	2.6	ı	ng/L	23
006	FS1-DPT0001-045.0-20220214	Aqueous	•	PFAS by ID	4.8		ng/L	23
006	FS1-DPT0001-045.0-20220214	Aqueous	PFOA	PFAS by ID	4.4		ng/L	23
006	FS1-DPT0001-045.0-20220214	Aqueous	PFPeA	PFAS by ID	5.2		ng/L	23
007	FS1-DPT0002-006.0-20220214	Aqueous	PFBS	PFAS by ID	220		ng/L	25
007	FS1-DPT0002-006.0-20220214	Aqueous	PFPeS	PFAS by ID	110		ng/L	25
007	FS1-DPT0002-006.0-20220214	Aqueous	PFHxS	PFAS by ID	82		ng/L	25
007	FS1-DPT0002-006.0-20220214	Aqueous	PFBA	PFAS by ID	200	Q	ng/L	25
007	FS1-DPT0002-006.0-20220214	Aqueous	PFHpA	PFAS by ID	7.4		ng/L	25
007	FS1-DPT0002-006.0-20220214	Aqueous	PFHxA	PFAS by ID	61		ng/L	25
007	FS1-DPT0002-006.0-20220214	Aqueous	PFOA	PFAS by ID	7.2		ng/L	25
007	FS1-DPT0002-006.0-20220214	Aqueous	PFPeA	PFAS by ID	150		ng/L	25
007	FS1-DPT0002-006.0-20220214	Aqueous	PFOS	PFAS by ID	2.2	I	ng/L	25
800	FS1-DPT0002-012.0-20220214	Aqueous	PFBS	PFAS by ID	19		ng/L	27
800	FS1-DPT0002-012.0-20220214	Aqueous	PFPeS	PFAS by ID	4.4		ng/L	27
800	FS1-DPT0002-012.0-20220214	Aqueous	PFHxS	PFAS by ID	5.7		ng/L	27
800	FS1-DPT0002-012.0-20220214	Aqueous	PFBA	PFAS by ID	43		ng/L	27
800	FS1-DPT0002-012.0-20220214	Aqueous	PFHpA	PFAS by ID	1.5	I	ng/L	27
800	FS1-DPT0002-012.0-20220214	Aqueous	PFHxA	PFAS by ID	6.8		ng/L	27
800	FS1-DPT0002-012.0-20220214	Aqueous	PFOA	PFAS by ID	2.1	I	ng/L	27
800	FS1-DPT0002-012.0-20220214	Aqueous	PFPeA	PFAS by ID	16		ng/L	27
009	FS1-DPT0002-017.0-20220214	Aqueous	PFBS	PFAS by ID	1.9	I	ng/L	29
009	FS1-DPT0002-017.0-20220214	Aqueous	PFPeS	PFAS by ID	2.1	I	ng/L	29
009	FS1-DPT0002-017.0-20220214	Aqueous	PFHxS	PFAS by ID	4.1		ng/L	29
009	FS1-DPT0002-017.0-20220214	Aqueous	PFBA	PFAS by ID	2.9	IQ	ng/L	29
009	FS1-DPT0002-017.0-20220214	Aqueous	PFHpA	PFAS by ID	1.0	I	ng/L	29
009	FS1-DPT0002-017.0-20220214	Aqueous	PFHxA	PFAS by ID	1.4	I	ng/L	29
009	FS1-DPT0002-017.0-20220214	Aqueous	PFOA	PFAS by ID	2.0	I	ng/L	29
009	FS1-DPT0002-017.0-20220214	Aqueous	PFPeA	PFAS by ID	1.5	I	ng/L	29
010	FS1-DPT0002-025.0-20220214	Aqueous	PFBS	PFAS by ID	4.3		ng/L	31
010	FS1-DPT0002-025.0-20220214	Aqueous	PFPeS	PFAS by ID	4.5		ng/L	31
010	FS1-DPT0002-025.0-20220214	Aqueous	PFHxS	PFAS by ID	4.1		ng/L	31
010	FS1-DPT0002-025.0-20220214	Aqueous	PFHpA	PFAS by ID	1.9	I	ng/L	31
010	FS1-DPT0002-025.0-20220214	Aqueous	PFHxA	PFAS by ID	3.4	I	ng/L	31
012	FS1-DPT0002-045.0-20220214	Aqueous	PFBS	PFAS by ID	1.7	I	ng/L	35
012	FS1-DPT0002-045.0-20220214	Aqueous	PFPeS	PFAS by ID	1.4	I	ng/L	35
012	FS1-DPT0002-045.0-20220214	Aqueous		PFAS by ID	3.8		ng/L	35
012	FS1-DPT0002-045.0-20220214	Aqueous	PFBA	PFAS by ID	2.6	I	ng/L	35
012	FS1-DPT0002-045.0-20220214	Aqueous		PFAS by ID	1.3	I	ng/L	35
014	FS1-DPT0003-005.0-20220215	Aqueous		PFAS by ID	3.6		ng/L	39
014	FS1-DPT0003-005.0-20220215	Aqueous		PFAS by ID	7.4	Q	ng/L	39
014	FS1-DPT0003-005.0-20220215	Aqueous	PFOS	PFAS by ID	4.4	Q	ng/L	39
016	FS1-DPT0003-012.0-20220215	Aqueous		PFAS by ID	7.9		ng/L	43
016	FS1-DPT0003-012.0-20220215	Aqueous	PFBA	PFAS by ID	8.6		ng/L	43

Detection Summary (Continued)

Lot Number: XB16023

Sampl	le Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
016	FS1-DPT0003-012.0-20220215	Aqueous	PFOS	PFAS by ID	2.9	I	ng/L	43
017	FS1-DPT0003-017.0-20220215	Aqueous		PFAS by ID	3.1	1	ng/L	45
017	FS1-DPT0003-017.0-20220215	Aqueous	PFBA	PFAS by ID	15		ng/L	45
017	FS1-DPT0003-017.0-20220215	Aqueous		PFAS by ID	0.98	ı	ng/L	45
017	FS1-DPT0003-017.0-20220215	Aqueous		PFAS by ID	1.1	1	ng/L	45
017	FS1-DPT0003-017.0-20220215	Aqueous		PFAS by ID	5.3		ng/L	45
018	FS1-DPT0003-025.0-20220215	Aqueous	PFBS	PFAS by ID	1.4	1	ng/L	47
018	FS1-DPT0003-025.0-20220215	Aqueous		PFAS by ID	5.0		ng/L	47
018	FS1-DPT0003-025.0-20220215	Aqueous	PFBA	PFAS by ID	21		ng/L	47
018	FS1-DPT0003-025.0-20220215	Aqueous	PFOA	PFAS by ID	2.1	I	ng/L	47
018	FS1-DPT0003-025.0-20220215	Aqueous	PFPeA	PFAS by ID	1.3	1	ng/L	47
018	FS1-DPT0003-025.0-20220215	Aqueous	PFOS	PFAS by ID	1.9	1	ng/L	47
019	FS1-DPT0003-035.0-20220215	Aqueous	PFBS	PFAS by ID	1.4	I	ng/L	49
019	FS1-DPT0003-035.0-20220215	Aqueous	PFHxS	PFAS by ID	4.8		ng/L	49
019	FS1-DPT0003-035.0-20220215	Aqueous	PFBA	PFAS by ID	51	Q	ng/L	49
019	FS1-DPT0003-035.0-20220215	Aqueous	PFHpA	PFAS by ID	1.1	1	ng/L	49
019	FS1-DPT0003-035.0-20220215	Aqueous	PFHxA	PFAS by ID	2.7	I	ng/L	49
019	FS1-DPT0003-035.0-20220215	Aqueous	PFOA	PFAS by ID	1.1	I	ng/L	49
019	FS1-DPT0003-035.0-20220215	Aqueous	PFPeA	PFAS by ID	3.3	I	ng/L	49
019	FS1-DPT0003-035.0-20220215	Aqueous	PFOS	PFAS by ID	5.0		ng/L	49
022	FS1-DPT0004-005.0-20220215	Aqueous	PFHxS	PFAS by ID	17	I	ng/L	55
022	FS1-DPT0004-005.0-20220215	Aqueous		PFAS by ID	28	1	ng/L	55
023	FS1-DPT0004-012.0-20220215	Aqueous	PFHxS	PFAS by ID	28	I	ng/L	57
023	FS1-DPT0004-012.0-20220215	Aqueous	PFBA	PFAS by ID	11	1	ng/L	57
023	FS1-DPT0004-012.0-20220215	Aqueous	PFHxA	PFAS by ID	13	1	ng/L	57
023	FS1-DPT0004-012.0-20220215	Aqueous	PFPeA	PFAS by ID	15	I	ng/L	57
025	FS1-DPT0004-017.0-20220215	Aqueous	6:2 FTS	PFAS by ID	3.7	1	ng/L	61
025	FS1-DPT0004-017.0-20220215	Aqueous	PFBS	PFAS by ID	2.3	1	ng/L	61
025	FS1-DPT0004-017.0-20220215	Aqueous	PFPeS	PFAS by ID	2.0	1	ng/L	61
025	FS1-DPT0004-017.0-20220215	Aqueous	PFHxS	PFAS by ID	24		ng/L	61
025	FS1-DPT0004-017.0-20220215	Aqueous	PFBA	PFAS by ID	10		ng/L	61
025	FS1-DPT0004-017.0-20220215	Aqueous	PFHpA	PFAS by ID	6.4		ng/L	61
025	FS1-DPT0004-017.0-20220215	Aqueous		PFAS by ID	6.6		ng/L	61
025	FS1-DPT0004-017.0-20220215	Aqueous		PFAS by ID	20		ng/L	61
025	FS1-DPT0004-017.0-20220215	Aqueous	PFPeA	PFAS by ID	7.2		ng/L	61
025	FS1-DPT0004-017.0-20220215	Aqueous	PFOS	PFAS by ID	2.2	1	ng/L	61
026	FS1-DPT0004-025.0-20220215	Aqueous	PFBS	PFAS by ID	6.8		ng/L	63
026	FS1-DPT0004-025.0-20220215	Aqueous	PFPeS	PFAS by ID	6.1		ng/L	63
026	FS1-DPT0004-025.0-20220215	Aqueous	PFHxS	PFAS by ID	34		ng/L	63
026	FS1-DPT0004-025.0-20220215	Aqueous	PFBA	PFAS by ID	6.4		ng/L	63
026	FS1-DPT0004-025.0-20220215	Aqueous	PFHpA	PFAS by ID	5.8		ng/L	63
026	FS1-DPT0004-025.0-20220215	Aqueous	PFHxA	PFAS by ID	11		ng/L	63
026	FS1-DPT0004-025.0-20220215	Aqueous	PFOA	PFAS by ID	5.1		ng/L	63
026	FS1-DPT0004-025.0-20220215	Aqueous	PFPeA	PFAS by ID	10		ng/L	63
027	FS1-DPT0004-035.0-20220215	Aqueous	PFBS	PFAS by ID	7.4		ng/L	65
027	FS1-DPT0004-035.0-20220215	Aqueous	PFPeS	PFAS by ID	6.1		ng/L	65
027	FS1-DPT0004-035.0-20220215	Aqueous	PFHxS	PFAS by ID	34		ng/L	65
027	FS1-DPT0004-035.0-20220215	Aqueous	PFBA	PFAS by ID	7.5		ng/L	65

Detection Summary (Continued)

Lot Number: XB16023

Sampl	e Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
027	FS1-DPT0004-035.0-20220215	Aqueous	PFHpA	PFAS by ID	6.5		ng/L	65
027	FS1-DPT0004-035.0-20220215	Aqueous	PFHxA	PFAS by ID	12		ng/L	65
027	FS1-DPT0004-035.0-20220215	Aqueous	PFOA	PFAS by ID	6.4		ng/L	65
027	FS1-DPT0004-035.0-20220215	Aqueous	PFPeA	PFAS by ID	11		ng/L	65
028	FS1-DPT0004-045.0-20220215	Aqueous	PFHxS	PFAS by ID	2.7	I	ng/L	67
028	FS1-DPT0004-045.0-20220215	Aqueous	PFBA	PFAS by ID	0.99	I	ng/L	67
028	FS1-DPT0004-045.0-20220215	Aqueous	PFHxA	PFAS by ID	1.3	I	ng/L	67
029	FS1-DPT0005-005.0-20220215	Aqueous	PFBA	PFAS by ID	10	1	ng/L	69
032	FS1-DPT0005-025.0-20220215	Aqueous	PFBS	PFAS by ID	1.9	I	ng/L	75
032	FS1-DPT0005-025.0-20220215	Aqueous	PFPeS	PFAS by ID	2.2	I	ng/L	75
032	FS1-DPT0005-025.0-20220215	Aqueous	PFHxS	PFAS by ID	12		ng/L	75
032	FS1-DPT0005-025.0-20220215	Aqueous	PFBA	PFAS by ID	11	Q	ng/L	75
032	FS1-DPT0005-025.0-20220215	Aqueous	PFHpA	PFAS by ID	10		ng/L	75
032	FS1-DPT0005-025.0-20220215	Aqueous	PFHxA	PFAS by ID	21		ng/L	75
032	FS1-DPT0005-025.0-20220215	Aqueous	PFOA	PFAS by ID	5.9		ng/L	75
032	FS1-DPT0005-025.0-20220215	Aqueous	PFPeA	PFAS by ID	32		ng/L	75
036	FS1-FD-20220215-01	Aqueous	PFBS	PFAS by ID	1.3	I	ng/L	83
036	FS1-FD-20220215-01	Aqueous	PFHxS	PFAS by ID	3.3	1	ng/L	83
036	FS1-FD-20220215-01	Aqueous	PFBA	PFAS by ID	15		ng/L	83
036	FS1-FD-20220215-01	Aqueous	PFOA	PFAS by ID	0.99	I	ng/L	83
036	FS1-FD-20220215-01	Aqueous	PFPeA	PFAS by ID	1.2	1	ng/L	83
036	FS1-FD-20220215-01	Aqueous	PFOS	PFAS by ID	4.8		ng/L	83
037	FS1-FD-20220215-02	Aqueous	PFHxS	PFAS by ID	28	1	ng/L	85
037	FS1-FD-20220215-02	Aqueous	PFBA	PFAS by ID	10	I	ng/L	85
037	FS1-FD-20220215-02	Aqueous	PFHxA	PFAS by ID	11	I	ng/L	85
037	FS1-FD-20220215-02	Aqueous	PFPeA	PFAS by ID	13	I	ng/L	85

(165 detections)

Client: Tetra Tech

Description: FS1-DPT0001-005.0-20220214

Project Name: KSC-FS1

Laboratory ID: XB16023-001 Matrix: Aqueous

Date Sampled:02/14/2022 1010

Project Number: 112G09581

Date Received: 02/16/2022 Run Prep Method SOP SPE 1

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/08/2022 1325 MMM

Prep Date 03/07/2022 1618 33989

Batch

CAS Analytical LOQ LOD DL Parameter Number Result O Units Run Method 756426-58-1 PFAS by ID SOP 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS) 3.6 IJ 7.1 3.6 1.8 ng/L PFAS by ID SOP 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...) 763051-92-9 3.6 7 1 3.6 ng/L 1.8 PFAS by ID SOP U 7 1 1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS) 39108-34-4 3.6 3.6 ng/L 1 1.8 1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS) 27619-97-2 PFAS by ID SOP 3.6 U 7.1 ng/L 1 3.6 1.8 1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS) 757124-72-4 PFAS by ID SOP 3.6 UQ 7.1 ng/L 3.6 1.8 Hexafluoropropylene oxide dimer acid (GenX) 13252-13-6 PFAS by ID SOP U 7.1 3.6 ng/L 1 3.6 1.8 4,8-dioxa-3H-perfluorononanoic acid (ADONA) 919005-14-4 PFAS by ID SOP 3.6 U 7.1 3.6 1.8 ng/L N-ethylperfluoro-1-octanesulfonamide (EtFOSA) 4151-50-2 PFAS by ID SOP 3.6 U 7 1 1.8 ng/L 1 3.6 N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA) 2991-50-6 PFAS by ID SOP U 7.1 1.8 3.6 3.6 ng/L N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA) 2355-31-9 PFAS by ID SOP 3.6 U 7 1 1.8 ng/L 3.6 Perfluoro-1-butanesulfonic acid (PFBS) 375-73-5 PFAS by ID SOP 0.88 1.8 3.5 1.8 ng/L Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 18 U 3.5 1.8 0.88 ng/L 1 Perfluoro-1-heptanesulfonic acid (PFHpS) 375-92-8 PFAS by ID SOP 1.8 U 3.5 0.88 ng/L 18 Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 0.88 1.8 U 3.5 1.8 ng/L Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 1.8 U 3.5 1.8 0.88 ng/L Perfluorohexanesulfonic acid (PFHxS) 355-46-4 PFAS by ID SOP 28 1 3.5 ng/L 1.8 0.88 Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 5.0 3.5 1.8 0.88 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.8 U 3.5 1.8 0.88 ng/L Perfluoro-n-dodecanoic acid (PFDoA) 307-55-1 PFAS by ID SOP 1.8 U 3.5 1.8 0.88 ng/L 1 Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 1.8 U 3.5 1.8 0.88 ng/L Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 1.4 1 3.5 1.8 0.88 ng/L 1 Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.8 U 3.5 1.8 ng/L 0.88 PFAS by ID SOP 2.9 Perfluoro-n-octanoic acid (PFOA) 335-67-1 3.5 1.8 0.88 ng/L Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP U ng/L 18 3.5 1.8 0.88 Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 1.8 3.5 1.8 0.88 ng/L Perfluoro-n-tridecanoic acid (PFTrDA) U 72629-94-8 PFAS by ID SOP 1.8 3.5 1.8 0.88 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.5 1.8 0.88 ng/L 1 Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 13 3.5 1.8 ng/L 0.88 Acceptance Run 1 Surrogate % Recovery \bigcirc Limits 13C2_4:2FTS 201 50-150

13C2_6:2FTS	128	50-150
13C2_8:2FTS	118	50-150
13C2_PFDoA	89	50-150
13C2_PFTeDA	77	50-150
13C3_PFBS	89	50-150
13C3_PFHxS	95	50-150
13C3-HFPO-DA	90	50-150
13C4_PFBA	69	50-150
13C4_PFHpA	88	50-150
13C5_PFHxA	92	50-150
13C5_PFPeA	88	50-150
13C6_PFDA	93	50-150
13C7_PFUdA	89	50-150

LOQ = Limit of Quantitation E = Quantitation of compound exceeded the calibration range Q = Surrogate failure V = Detected in the method blank DL = Detection Limit U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and ≥ DL L = LCS/LCSD failure W = Reported on wet weight basis S = MS/MSD failure Q = Out of holding time LOD = Limit of Detection D = Dilution > 1

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0001-005.0-20220214

Date Sampled:02/14/2022 1010

Date Received: 02/16/2022

Laboratory ID: XB16023-001 Matrix: Aqueous

Project Name: KSC-FS1 Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	cceptance Limits	
13C8_PFOA	93	50-150	
13C8_PFOS	84	50-150	
13C9_PFNA	98	50-150	
d-EtFOSA	70	50-150	
d5-EtFOSAA	106	50-150	
d3-MeFOSAA	94	50-150	

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-002

Description: FS1-DPT0001-012.0-20220214

Date Sampled:02/14/2022 1030 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G0958

Project Number: 112G09581

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/08/2022 1336 MMM 03/07/2022 1618 33989

9. Monorheadecathuro-3 acuannone-1 sulform call (PC FESUNS) 7542-581. PFAS by ID SOP 3.6 01 7.2 3.6 18 ng/l 1 11. https://doi.org/10.1016/j.net/10.201	Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
11,11,12,12,12,12,12,12,12,12,12,12,12,1	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11.1 1.1	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3	763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
H.11/2H.2H perfluorohexane sulfonic acid (42 FTS)	1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Hexafluoroproproplene oxide dimer acid (GenXy)	1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4,8 dloxa 3 H perfluoronananica caid (ADONA) 919005 1.4 742 748 S by ID SOP 3.6 0 7.2 3.6 1.8 ng/L 1 1 1 1 1 1 1 1 1	1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
Nethypherfluoro-1-octanesulfonamidoseitic acid (EIFOSA)	Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Nethylperfluoro-1 octanesulfonamidoacetic acid (EIFOSA) 2991-50.6 PK3 by ID SOP 3.6 U 7.2 3.6 1.8 ng/L 1 Nmethylperfluoro-1 octanesulfonamidoacetic acid (MeFOSA) 2355-31-9 PK3 by ID SOP 3.6 U 7.2 3.6 1.8 ng/L 1 Perfluoro-1-decanesulfonic acid (PFBS) 3757-32 PK3 by ID SOP 1.9 I 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decanesulfonic acid (PFBS) 3757-32 PK3 by ID SOP 1.9 I 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decanesulfonic acid (PFNS) 3757-32 PK3 by ID SOP 3.0 I 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decanesulfonic acid (PFNS) 3757-32 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decanesulfonic acid (PFNS) 3755-24 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decanesulfonic acid (PFNS) 3755-24 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decanesulfonic acid (PFNS) 3755-24 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNS) 3755-24 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNS) 3755-24 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-24 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-25 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-24 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-24 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-25 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-25 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-25 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-25 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-25 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-25 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-25 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-25 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid (PFNA) 3755-25 PK3 by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-1-decaneciacid	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Nemethyliperfluoro-1-octanesulfonamidoacetic acid (MeFoS) 2355-31-9 PFAS by ID SOP 36 1.8 0.90 0.91 1 1 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 1.8 0.90 0.91 1 1 1.8 1.8 0.90 0.91 1 1 1.8 1.8 0.90 0.91 1 1 1.8 1.8 0.90 0.91 1 1 1.8 0.90 0.91 1 1 1.8 0.90 0.91 1 1 1.8 0.90 0.91 1 1 1.8 0.90 0.91 1 1 1.8 0.90 0.91 1 1 1.8 0.90 0.91 1 1 1.8 0.90 0.91 1 1 1.8 0.90 0.91 1 1 1.8 0.90 0.91 1 1 1.8 0.90 0.91 1 1 1 1.8 0.90 0.91 1 1 1 1 1 1 1 1 1	N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butaneaulfonic acid (PFDS) 375-73-5 PFAS by ID SOP 1.9 1 3.6 1.8 0.90 ng/L 1 1 2 2 1 2 2 2 2 2	N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 1.8 0.0 3.6 1.8 0.90 ng/L 1 1 1 1 1 1 1 1 1	N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFHpS) 375-92-8 PFAS by ID SOP 3.0 1.0 3.6 1.8 0.90 0.91 1.0	Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	1	3.6	1.8	0.90	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L 1 1 1 1 1 1 1 1 1	Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 18 1 3.6 1.8 0.90 ng/L 1 1 1 1 1 1 1 1 1	Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	3.0	1	3.6	1.8	0.90	ng/L	1
Perfluoron-butanoic acid (PFHxS) 355-464 PFAS by ID SOP 16 3.6 1.8 0.90 ng/L 1	Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 9.8 0. 3.6 1.8 0.90 ng/L 1	Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	1	3.6	1.8	0.90	ng/L	1
Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 1 1 1 1 1 1 1 1	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	16		3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDA) 337-85-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 1 1 1 1 1 1 1 1	Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	9.8	Q	3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 3.5 I 3.6 1.8 0.90 ng/L 1 Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 3.8 3.6 1.8 0.90 ng/L 1 Perfluoro-n-hexanoic acid (PFHxA) 375-95-1 PFAS by ID SOP 1.8 0.36 1.8 0.90 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 335-67-1 PFAS by ID SOP 21 3.6 1.8 0.90 ng/L 1 Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 4.4 3.6 1.8 0.90 ng/L 1 Perfluoro-n-teltradecanoic acid (PFTeA) 376-06-7 PFAS by ID SOP 1.8 0 3.6 1.8 0.90 ng/L 1 Perfluoro-n-teltradecanoic acid (PFTDA) 376-06-7 PFAS by ID SOP 1.8 0 3.6 1.8 0.90 ng/L 1 Perfluoro-n-teltradecanoic acid (PFUA) 205-35-34 PFAS by ID SOP 1.8 0 3.6	Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-hexanoic acid (PFNA) 307-24-4 PFAS by ID SOP 3.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-onanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 21 3.6 1.8 0.90 ng/L 1 Perfluoro-n-octanoic acid (PFDA) 376-09-0 3PFAS by ID SOP 21 3.6 1.8 0.90 ng/L 1 Perfluoro-n-tetradecanoic acid (PFDA) 376-09-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-tetradecanoic acid (PFTDA) 376-09-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 376-09-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 1763-23-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 0.8 0.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 0.8 0.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 0.8 0.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 0.8 0.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 0.8 0.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 0.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 0.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 0.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 0.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3.6 0.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) PFAS by ID SOP 1.8 U 3	Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-onanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 21 3.6 1.8 0.90 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 2706-90-3 PFAS by ID SOP 4.4 3.6 1.8 0.90 ng/L 1 Perfluoro-n-tidecanoic acid (PFTDA) 776-29-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-tidecanoic acid (PFTDA) 776-29-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-94-8 PFAS by ID	Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	3.5	1	3.6	1.8	0.90	ng/L	1
Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 21 3.6 1.8 0.90 ng/L 1 Perfluoro-n-pentanoic acid (PFPOA) 2706-90-3 PFAS by ID SOP 4.4 3.6 1.8 0.90 ng/L 1 Perfluoro-n-teltradecanoic acid (PFTOA) 376-96-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-teltradecanoic acid (PFTOA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-teltradecanoic acid (PFTOA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-teltradecanoic acid (PFTOA) 1763-23-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-teltradecanoic acid (PFTOA) 20 Naccesser PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-teideaconic acid (PFTOA) N 116-2 <t< td=""><td>Perfluoro-n-hexanoic acid (PFHxA)</td><td>307-24-4</td><td>PFAS by ID SOP</td><td>3.8</td><td></td><td>3.6</td><td>1.8</td><td>0.90</td><td>ng/L</td><td>1</td></t<>	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	3.8		3.6	1.8	0.90	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA) 2706-90-8 PFAS by ID SOP 4.4 3.6 1.8 0.90 ng/L 1 Perfluoro-n-teltradecanoic acid (PFTeDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFDA) 72629-94-8 1.8 U 3.6 1.8 0.90 0.90 0.90 0.90 0.90	Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tertadecanoic acid (PFTeDA) 376-0-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-tridecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoroctanesulfonic acid (PFUdA) 1763-23-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoroctanesulfonic acid (PFUdA) 2058-94-8 PFAS by ID SOP 9.6 3.6 1.8 0.90 ng/L 1 Perfluoroctanesulfonic acid (PFUdA) 7 PFAS by ID SOP 9.6 3.6 1.8 0.90 ng/L 1 Surrogate Recovery N 1.99 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	21		3.6	1.8	0.90	ng/L	1
Perfluoron-tridecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoron-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluorocotanesulfonic acid (PFUdA) 1763-23-1 PFAS by ID SOP 9.6 3.6 1.8 0.90 ng/L 1 Perfluorocotanesulfonic acid (PFUdA) 2 RUn 1 name Acceptance 3.6 1.8 0.90 ng/L 1 Surrogate 2 Run 1 name Acceptance 3.6 1.8 0.90 ng/L 1 Surrogate 2 Run 1 name Acceptance 3.5 1.8 0.90 ng/L 1 1302_4:FTS N 199 50-150 1.5	Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	4.4		3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1,8 0,90 ng/L 1 Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.6 3.6 1,8 0,90 ng/L 1 Surrogate Q Run 1 / Acceptance Image: Control of the properties of the	Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluorocotanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.6 3.6 1.8 0.90 ng/L 1 Surrogate 2 Run 1 / Recovery Acceptance Surrogate Surr	Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS) PFAS by ID SOP 9.6 3.6 1.8 0.90 ng/L 1 1 1 1 1 1 1 1 1	Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Surrogate Q % Recovery Limits 13C2_4:2FTS N 199 50-150 13C2_6:2FTS 146 50-150 13C2_8:2FTS 133 50-150 13C2_PFDOA 87 50-150 13C2_PFTeDA 57 50-150 13C3_PFBS 73 50-150 13C3_PFHxS 101 50-150 13C3_HFPO-DA 78 50-150 13C4_PFBA N 31 50-150 13C4_PFHpA 95 50-150 13C5_PFHxA 85 50-150 13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	9.6		3.6		0.90	ng/L	1
13C2_6:2FTS 146 50-150 13C2_8:2FTS 133 50-150 13C2_PFDoA 87 50-150 13C3_PFTeDA 57 50-150 13C3_PFBS 73 50-150 13C3_PFHxS 101 50-150 13C3-HFPO-DA 78 50-150 13C4_PFBA N 31 50-150 13C4_PFHpA 95 50-150 13C5_PFHxA 85 50-150 13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150	Surrogate Q % Re	covery Lir								
13C2_8:2FTS 133 50-150 13C2_PFDOA 87 50-150 13C3_PFTeDA 57 50-150 13C3_PFBS 73 50-150 13C3_PFHxS 101 50-150 13C3-HFPO-DA 78 50-150 13C4_PFBA N 31 50-150 13C4_PFHpA 95 50-150 13C5_PFHxA 85 50-150 13C6_PFPBA 64 50-150 13C6_PFDA 96 50-150										
13C2_PFToDA 87 50-150 13C2_PFTeDA 57 50-150 13C3_PFBS 73 50-150 13C3_PFHxS 101 50-150 13C3-HFPO-DA 78 50-150 13C4_PFBA N 31 50-150 13C4_PFHpA 95 50-150 13C5_PFHxA 85 50-150 13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150										
13C2_PFTeDA 57 50-150 13C3_PFBS 73 50-150 13C3_PFHxS 101 50-150 13C3_HFPO-DA 78 50-150 13C4_PFBA N 31 50-150 13C4_PFHpA 95 50-150 13C5_PFHxA 85 50-150 13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150										
13C3_PFBS 73 50-150 13C3_PFHxS 101 50-150 13C3-HFPO-DA 78 50-150 13C4_PFBA N 31 50-150 13C4_PFHpA 95 50-150 13C5_PFHxA 85 50-150 13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150	13C2_PFDoA	87 50	-150							
13C3_PFHxS 101 50-150 13C3-HFPO-DA 78 50-150 13C4_PFBA N 31 50-150 13C4_PFHpA 95 50-150 13C5_PFHxA 85 50-150 13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150										
13C3-HFPO-DA 78 50-150 13C4_PFBA N 31 50-150 13C4_PFHpA 95 50-150 13C5_PFHxA 85 50-150 13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150	13C3_PFBS	73 50	-150							
13C4_PFBA N 31 50-150 13C4_PFHpA 95 50-150 13C5_PFHxA 85 50-150 13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150		101 50	-150							
13C4_PFHpA 95 50-150 13C5_PFHxA 85 50-150 13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150			-150							
13C5_PFHxA 85 50-150 13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150	_									
13C5_PFPeA 64 50-150 13C6_PFDA 96 50-150	·									
13C6_PFDA 96 50-150	13C5_PFHxA	85 50	-150							
	13C5_PFPeA	64 50	-150							
13C7_PFUdA 93 50-150		96 50	-150							
	13C7_PFUdA	93 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Date Received: 02/16/2022

Description: FS1-DPT0001-012.0-20220214

Date Sampled:02/14/2022 1030 Project Name: KSC-F

Laboratory ID: XB16023-002 Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

Run 1 Acceptance Surrogate Q % Recovery Limits 13C8_PFOA 50-150 13C8_PFOS 93 50-150 13C9_PFNA 98 50-150 d-EtFOSA 53 50-150 d5-EtFOSAA 95 50-150 d3-MeFOSAA 92 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

 $E = Quantitation \ of compound \ exceeded \ the \ calibration \ range$ $P = The \ RPD \ between \ two \ GC \ columns \ exceeds \ 40\%$ $LOD = Limit \ of \ Detection$

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: XB16023-003

Description: FS1-DPT0001-017.0-20220214

Date Sampled:02/14/2022 1050 Project Name: KSC-FS1 Matrix: Aqueous

Date Received: 02/16/2022 Project Number: 112G09581

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/08/2022 1346 MMM	03/07/2022 1618 33989

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	UQ	7.1	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.8	1	3.5	1.8	0.89	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.3	1	3.5	1.8	0.89	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	1	3.5	1.8	0.89	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	21		3.5	1.8	0.89	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	9.1	Q	3.5	1.8	0.89	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	5.3		3.5	1.8	0.89	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	5.5		3.5	1.8	0.89	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	28		3.5	1.8	0.89	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	5.9		3.5	1.8	0.89	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.89	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.89	ng/L	1
		otance							

Surrogate	Q	% Recovery	Limits
13C2_4:2FTS	N	196	50-150
13C2_6:2FTS		132	50-150
13C2_8:2FTS		116	50-150
13C2_PFDoA		89	50-150
13C2_PFTeDA		77	50-150
13C3_PFBS		82	50-150
13C3_PFHxS		91	50-150
13C3-HFPO-DA		83	50-150
13C4_PFBA	Ν	39	50-150
13C4_PFHpA		87	50-150
13C5_PFHxA		86	50-150
13C5_PFPeA		71	50-150
13C6_PFDA		100	50-150
13C7_PFUdA		86	50-150

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L = LCS/LCSD failure
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

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Client: Tetra Tech

Date Received: 02/16/2022

Description: FS1-DPT0001-017.0-20220214

Date Sampled:02/14/2022 1050 Project Name: KSC

Project Name: KSC-FS1
Project Number: 112G09581

Laboratory ID: XB16023-003 Matrix: Aqueous

Run 1 Acceptance Surrogate Q % Recovery Limits 13C8_PFOA 50-150 13C8_PFOS 92 50-150 13C9_PFNA 93 50-150 d-EtFOSA 71 50-150 d5-EtFOSAA 99 50-150 d3-MeFOSAA 86 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

 $E = Quantitation \ of compound \ exceeded \ the \ calibration \ range$ $P = The \ RPD \ between \ two \ GC \ columns \ exceeds \ 40\%$ $LOD = Limit \ of \ Detection$

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-004

Description: FS1-DPT0001-025.0-20220214

Date Sampled:02/14/2022 1115 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch SOP SPE PFAS by ID SOP QSM B-15 03/08/2022 1357 MMM 03/07/2022 1618 33989

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ON	S) 756426-58-1	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3	3) 763051-92-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	UQ	7.4	3.7	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.4	3.7	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	5.7		3.7	1.9	0.93	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	6.6		3.7	1.9	0.93	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	41		3.7	1.9	0.93	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	3.7	Q	3.7	1.9	0.93	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	4.5		3.7	1.9	0.93	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	7.7		3.7	1.9	0.93	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	5.0		3.7	1.9	0.93	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	6.6		3.7	1.9	0.93	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
		otance mits						Ü	
13C2_4:2FTS N		-150							
13C2_6:2FTS N	155 50	-150							
13C2_8:2FTS	132 50	-150							
13C2_PFDoA	81 50	-150							
13C2_PFTeDA	68 50	-150							
13C3_PFBS	73 50	-150							
13C3_PFHxS	93 50	-150							
13C3-HFPO-DA	76 50	-150							
13C4_PFBA N	35 50	-150							
13C4_PFHpA	89 50	-150							
13C5_PFHxA	82 50	-150							

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13C5_PFPeA

13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

50-150

50-150

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

66

96

88

Client: Tetra Tech

Description: FS1-DPT0001-025.0-20220214

Date Sampled:02/14/2022 1115

Date Received: 02/16/2022

Project Name: KSC-FS1

Laboratory ID: XB16023-004 Matrix: Aqueous

Project Number: 112G09581

Surrogate		ptance mits
13C8_PFOA	93 50-	0-150
13C8_PFOS	90 50-	0-150
13C9_PFNA	98 50-	0-150
d-EtFOSA	54 50-	0-150
d5-EtFOSAA	99 50-	0-150
d3-MeFOSAA	89 50-	0-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0001-035.0-20220214

Date Sampled:02/14/2022 1140 Project Name: KSC-FS1
Date Received: 02/16/2022 Project Number: 112G09581

Laboratory ID: XB16023-005

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/08/2022 1407 MMM 03/07/2022 1618 33989

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	14		7.2	3.6	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	3.3	I	3.6	1.8	0.90	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.1	I	3.6	1.8	0.90	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	3.0	1	3.6	1.8	0.90	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	24		3.6	1.8	0.90	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	11	Q	3.6	1.8	0.90	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	5.1		3.6	1.8	0.90	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	9.9		3.6	1.8	0.90	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	12		3.6	1.8	0.90	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	11		3.6	1.8	0.90	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	10		3.6	1.8	0.90	ng/L	1
		otance mits							
13C2_4:2FTS N	227 50	-150							
13C2_6:2FTS	57 50	-150							
13C2_8:2FTS	121 50	-150							
13C2_PFDoA	94 50	-150							
13C2_PFTeDA	74 50	-150							
13C3_PFBS	89 50	-150							
13C3_PFHxS	104 50	-150							
13C3-HFPO-DA	89 50	-150							
13C4_PFBA N	46 50	-150							
13C4_PFHpA	96 50	-150							
13C5_PFHxA	94 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFPeA 13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

79

103

95

LOD = Limit of Detection

50-150

50-150

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-DPT0001-035.0-20220214

Date Sampled:02/14/2022 1140

Date Received: 02/16/2022

Project Name: KSC-FS1
Project Number: 112G09581

Laboratory ID: XB16023-005

Matrix: Aqueous

Surrogate	Run 1 Acceptance Q % Recovery Limits
13C8_PFOA	97 50-150
13C8_PFOS	97 50-150
13C9_PFNA	101 50-150
d-EtFOSA	70 50-150
d5-EtFOSAA	112 50-150
d3-MeFOSAA	98 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: XB16023-006

Matrix: Aqueous

Description: FS1-DPT0001-045.0-20220214

Project Name: KSC-FS1

Date Sampled:02/14/2022 1230 Date Received: 02/16/2022

Project Number: 112G09581

Run Prep Method SOP SPE 1

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/08/2022 1418 MMM

Prep Date 03/07/2022 1618 33989

Batch

CAS Analytical Result Q LOQ LOD DL Parameter Number Units Run Method 756426-58-1 PFAS by ID SOP 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS) 3.6 IJ 7.1 3.6 1.8 ng/L PFAS by ID SOP 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...) 763051-92-9 3.6 7 1 3.6 ng/L 1 1.8 PFAS by ID SOP 3.6 U 7 1 1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS) 39108-34-4 3.6 ng/L 1 1.8 1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS) 27619-97-2 PFAS by ID SOP 3.6 U 7.1 ng/L 1 3.6 1.8 1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS) 757124-72-4 PFAS by ID SOP 3.6 UQ 7.1 ng/L 3.6 1.8 Hexafluoropropylene oxide dimer acid (GenX) 13252-13-6 PFAS by ID SOP U 7.1 3.6 ng/L 1 3.6 1.8 4,8-dioxa-3H-perfluorononanoic acid (ADONA) 919005-14-4 PFAS by ID SOP 3.6 U 7.1 3.6 1.8 ng/L N-ethylperfluoro-1-octanesulfonamide (EtFOSA) 4151-50-2 PFAS by ID SOP 3.6 U 7 1 18 ng/L 1 3.6 N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA) 2991-50-6 PFAS by ID SOP 3.6 U 7.1 1.8 3.6 ng/L N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA) 2355-31-9 PFAS by ID SOP 3.6 U 7 1 1.8 ng/L 3.6 Perfluoro-1-butanesulfonic acid (PFBS) 375-73-5 PFAS by ID SOP 0.98 0.89 3.6 1.8 ng/L Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 18 U 3.6 1.8 0.89 ng/L 1 Perfluoro-1-heptanesulfonic acid (PFHpS) 375-92-8 PFAS by ID SOP 1.8 U 3.6 0.89 ng/L 1 18 Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 0.89 1.8 U 3.6 1.8 ng/L Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 1.8 3.6 1.8 0.89 ng/L Perfluorohexanesulfonic acid (PFHxS) 355-46-4 PFAS by ID SOP 89 ng/L 1 36 1.8 0.89 Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 4.1 Q 3.6 1.8 0.89 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 18 U 3.6 1.8 0.89 ng/L Perfluoro-n-dodecanoic acid (PFDoA) 307-55-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.89 ng/L 1 Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 2.6 1 3.6 1.8 0.89 ng/L Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 4.8 3.6 1.8 0.89 ng/L 1 Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.89 ng/L Perfluoro-n-octanoic acid (PFOA) PFAS by ID SOP 335-67-1 4.4 3.6 1.8 0.89 ng/L Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 5.2 ng/L 1 3.6 1.8 0.89 Perfluoro-n-tetradecanoic acid (PFTeDA) PFAS by ID SOP 376-06-7 1.8 3.6 1.8 0.89 ng/L Perfluoro-n-tridecanoic acid (PFTrDA) PFAS by ID SOP 1.8 U 72629-94-8 3.6 1.8 0.89 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.89 ng/L 1 Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.89 ng/L Run 1 Acceptance

Surrogate	Q	% Recovery	Limits
13C2_4:2FTS	N	215	50-150
13C2_6:2FTS		142	50-150
13C2_8:2FTS		116	50-150
13C2_PFDoA		87	50-150
13C2_PFTeDA		77	50-150
13C3_PFBS		86	50-150
13C3_PFHxS		96	50-150
13C3-HFPO-DA		82	50-150
13C4_PFBA	N	48	50-150
13C4_PFHpA		90	50-150
13C5_PFHxA		84	50-150
13C5_PFPeA		77	50-150
13C6_PFDA		98	50-150
13C7_PFUdA		85	50-150

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L = LCS/LCSD failure
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0001-045.0-20220214

Date Sampled:02/14/2022 1230 Date Received: 02/16/2022 Laboratory ID: XB16023-006 Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

Surrogate Q	Run 1 A % Recovery	cceptance Limits
13C8_PFOA	94	50-150
13C8_PFOS	90	50-150
13C9_PFNA	103	50-150
d-EtFOSA	72	50-150
d5-EtFOSAA	104	50-150
d3-MeFOSAA	93	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1 Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

 $\label{thm:pace-analytical-Services, LLC} \textbf{ (formerly Shealy Environmental Services, Inc.)}$

Client: Tetra Tech

Description: FS1-DPT0002-006.0-20220214

Date Sampled:02/14/2022 1335 Project Name: KSC-FS1 Laboratory ID: XB16023-007

Matrix: Aqueous

Date Received: 02/16/2022

Project Number: 112G09581

Run Prep Method SOP SPE

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/08/2022 1429 MMM

Prep Date 03/07/2022 1618 33989

Batch

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.8	UQ	7.5	3.8	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	220		3.8	1.9	0.94	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	110		3.8	1.9	0.94	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	82		3.8	1.9	0.94	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	200	Q	3.8	1.9	0.94	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	7.4		3.8	1.9	0.94	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	61		3.8	1.9	0.94	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	7.2		3.8	1.9	0.94	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	150		3.8	1.9	0.94	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.2	1	3.8	1.9	0.94	ng/L	1
		otance nits							
		-150							
_		-150							
_		-150							
13C2_PFDoA	79 50	-150							
13C2_PFTeDA	70 50	-150							
13C3_PFBS	71 50	-150							
13C3_PFHxS	95 50	-150							
13C3-HFPO-DA	85 50	-150							
13C4_PFBA N	23 50	-150							

LOQ = Limit of Quantitation V = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit Q = Surrogate failure U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and \geq DL L = LCS/LCSD failure LOD = Limit of Detection S = MS/MSD failure W = Reported on wet weight basis D = Dilution > 1Q = Out of holding time

50-150

50-150

50-150

50-150

50-150

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13C4_PFHpA

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

13C7_PFUdA

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84

83

60

93

81

Client: Tetra Tech

Description: FS1-DPT0002-006.0-20220214

Date Sampled:02/14/2022 1335

Date Received: 02/16/2022

Project Name: KSC-FS1

Laboratory ID: XB16023-007 Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	91	50-150
13C8_PFOS	88	50-150
13C9_PFNA	91	50-150
d-EtFOSA	66	50-150
d5-EtFOSAA	91	50-150
d3-MeFOSAA	88	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} &DL = Detection \ Limit \\ &I = Estimated \ result < LOQ \ and \ \underline{>} \ DL \\ &D = Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

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Description: FS1-DPT0002-012.0-20220214

Laboratory ID: XB16023-008 Matrix: Aqueous

Date Sampled:02/14/2022 1400 Project Name: KSC-FS1
Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch 2 SOP SPE PFAS by ID SOP QSM B-15 1 03/10/2022 1903 ASD 03/09/2022 1643 34285

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	2
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	2
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	2
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	2
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	2
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	2
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.8	UQ	7.6	3.8	1.9	ng/L	2
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.8	UQ	7.6	3.8	1.9	ng/L	2
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.8	UQ	7.6	3.8	1.9	ng/L	2
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	19		3.8	1.9	0.95	ng/L	2
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	2
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	2
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	2
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	4.4		3.8	1.9	0.95	ng/L	2
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	5.7		3.8	1.9	0.95	ng/L	2
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	43		3.8	1.9	0.95	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	2
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	UQ	3.8	1.9	0.95	ng/L	2
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.5	1	3.8	1.9	0.95	ng/L	2
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	6.8		3.8	1.9	0.95	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	2
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.1	1	3.8	1.9	0.95	ng/L	2
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	16		3.8	1.9	0.95	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	UQ	3.8	1.9	0.95	ng/L	2
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	UQ	3.8	1.9	0.95	ng/L	2
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	UQ	3.8	1.9	0.95	ng/L	2
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	2
		otance mits							
13C2_4:2FTS	134 50	-150							

Surrogate	Q	% Recovery	Limits
13C2_4:2FTS		134	50-150
13C2_6:2FTS		104	50-150
13C2_8:2FTS		66	50-150
13C2_PFDoA	N	18	50-150
13C2_PFTeDA	N	4.5	50-150
13C3_PFBS		83	50-150
13C3_PFHxS		86	50-150
13C3-HFPO-DA		79	50-150
13C4_PFBA		53	50-150
13C4_PFHpA		85	50-150
13C5_PFHxA		87	50-150
13C5_PFPeA		83	50-150
13C6_PFDA		56	50-150
13C7_PFUdA	N	37	50-150

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L = LCS/LCSD failure
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0002-012.0-20220214

Date Sampled:02/14/2022 1400 Date Received: 02/16/2022

Matrix: Aqueous

Laboratory ID: XB16023-008

Project Name: KSC-FS1 Project Number: 112G09581

Surrogate	Q %	Run 2 Recovery	Acceptance Limits	
13C8_PFOA		84	50-150	
13C8_PFOS		57	50-150	
13C9_PFNA		73	50-150	
d-EtFOSA	Ν	12	50-150	
d5-EtFOSAA	Ν	25	50-150	
d3-MeFOSAA	N	30	50-150	

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0002-017.0-20220214

Date Sampled:02/14/2022 1430 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581 Laboratory ID: XB16023-009

I = Estimated result < LOQ and \geq DL

D = Dilution > 1

L = LCS/LCSD failure

S = MS/MSD failure

Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/08/2022 1450 MMM	03/07/2022 1618	33989

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Rur
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.5	UQ	7.0	3.5	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	1	3.5	1.8	0.87	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.1	1	3.5	1.8	0.87	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	4.1		3.5	1.8	0.87	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	2.9	IQ	3.5	1.8	0.87	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.0	1	3.5	1.8	0.87	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.4	1	3.5	1.8	0.87	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.0	1	3.5	1.8	0.87	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.5	1	3.5	1.8	0.87	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Surrogate Rt Q % Re		otance mits							
		i-150							
_		-150							
		-150							
		-150							
13C2_PFTeDA		-150							
13C3_PFBS		-150							
		-150							
_		-150							
		-150							
		-150 -150							
_ ·		-150							
		i-150 i-150							
		-150							
13C7_PFUdA	85 50	-150							
OQ = Limit of Quantitation V = Detected in the method blank	E = Quantitation	of compound exceeded th	e calibration r	ange D	DL = Detection Lir	nit	Q	= Surrogat	te failu

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

U = Not detected at or above the LOQ

Q = Out of holding time

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N = Recovery is out of criteria

W = Reported on wet weight basis

LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Description: FS1-DPT0002-017.0-20220214

Date Sampled:02/14/2022 1430

Date Received: 02/16/2022

Laboratory ID: XB16023-009 Matrix: Aqueous

Project Name: KSC-FS1 Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	cceptance Limits		
13C8_PFOA	90	50-150		
13C8_PFOS	91	50-150		
13C9_PFNA	88	50-150		
d-EtFOSA	63	50-150		
d5-EtFOSAA	91	50-150		
d3-MeFOSAA	79	50-150		

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: XB16023-010

Description: FS1-DPT0002-025.0-20220214

Date Sampled:02/14/2022 1500 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch 1 SOP SPE PFAS by ID SOP QSM B-15 1 03/08/2022 1500 MMM 03/07/2022 1618 33989

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	4.3		3.6	1.8	0.91	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	4.5		3.6	1.8	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	4.1		3.6	1.8	0.91	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	1	3.6	1.8	0.91	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	3.4	1	3.6	1.8	0.91	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
		otance mits							
-		-150							
13C2_6:2FTS	132 50)-150							
13C2_8:2FTS	118 50)-150							
13C2_PFDoA	86 50	-150							
13C2_PFTeDA	59 50	-150							
13C3_PFBS	80 50	-150							
13C3_PFHxS	95 50	-150							
13C3-HFPO-DA	89 50	-150							
13C4_PFBA		-150							
13C4_PFHpA	91 50	-150							
13C5_PFHxA	84 50	-150							
13C5_PFPeA	82 50	-150							
13C6_PFDA	104 50	-150							
13C7_PFUdA	88 50)-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-DPT0002-025.0-20220214

Date Sampled:02/14/2022 1500

Date Received: 02/16/2022

Project Name: KSC-FS1

Project Number: 112G09581

Laboratory ID: XB16023-010 Matrix: Aqueous

d5-EtFOSAA 107 50-150	Surrogate	Q	Run 1 A % Recovery	Acceptance Limits		
13C9_PFNA 97 50-150 d-EtFOSA N 43 50-150 d5-EtFOSAA 107 50-150	13C8_PFOA		90	50-150		
d-EtFOSA N 43 50-150 d5-EtFOSAA 107 50-150	13C8_PFOS		92	50-150		
d5-EtFOSAA 107 50-150	13C9_PFNA		97	50-150		
	d-EtFOSA	Ν	43	50-150		
d3-MeFOSAA 94 50-150	d5-EtFOSAA		107	50-150		
	d3-MeFOSAA		94	50-150		

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0002-035.0-20220214

Project Name: KSC-FS1 Project Number: 112G09581 Laboratory ID: XB16023-011 Matrix: Aqueous

Date Sampled:02/14/2022 1525

Run Prep Method SOP SPE

13C4_PFBA

13C4_PFHpA

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

13C7_PFUdA

Date Received: 02/16/2022

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/08/2022 1532 MMM

Prep Date 03/07/2022 1618 33989

Batch

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.8	UQ	7.5	3.8	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.8	UQ	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.9	UQ	3.7	1.9	0.94	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.94	ng/L	1
Ru	ın 1 Accep	otance mits					0.7.	3	
13C2_4:2FTS N	168 50	-150							·
13C2_6:2FTS	125 50	-150							
13C2_8:2FTS	106 50	-150							
13C2_PFDoA	79 50	-150							
13C2_PFTeDA	52 50	-150							
13C3_PFBS	86 50	-150							
13C3_PFHxS	86 50	-150							
13C3-HFPO-DA	86 50	-150							
4004 DED4		450							

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L = LCS/LCSD failure
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S = MS/MSD failure

50-150

50-150

50-150

50-150

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

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62

81

87

82

89

91

Client: Tetra Tech

Description: FS1-DPT0002-035.0-20220214

Date Sampled:02/14/2022 1525 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581 Laboratory ID: XB16023-011

Matrix: Aqueous

Surrogate	Q	Run 1 % Recovery	Acceptance Limits			
13C8_PFOA	N	22	50-150			
13C8_PFOS		89	50-150			
13C9_PFNA		93	50-150			
d-EtFOSA	Ν	45	50-150			
d5-EtFOSAA		94	50-150			
d3-MeFOSAA		89	50-150			

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0002-045.0-20220214

Project Name: KSC-FS1

Laboratory ID: XB16023-012 Matrix: Aqueous

Date Sampled:02/14/2022 1555

Project Number: 112G09581

Run Prep Method SOP SPE

Date Received: 02/16/2022

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/08/2022 1543 MMM

Prep Date 03/07/2022 1618 33989

Batch

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

9-chiloroheasdeafluror 3 oxnonne 1-sutificia and (PC-PR 30NS) 756426-591 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 1-chiloralizosational-a-sularidina and (ICP-PR3) 75104-722 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosational-a-sularidina and (ICP-PR3) 75104-724 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosational caudi (42-PTS) 75114-724 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosational caudi (42-PTS) 75114-724 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosational caudi (42-PTS) 75114-724 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosational caudi (42-PTS) 75114-724 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosational (ADONA) 91906-144 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosational (ADONA) 91906-144 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosationalizosacetic 30 (EPFOSA) 1251-34 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosationalizosacetic 30 (EPFOSA) 1251-34 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosationalizosacetic 30 (EPFOSA) 1251-34 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosationalizosacetic 30 (EPFOSA) 1251-34 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosationalizosacetic 30 (EPFOSA) 1251-34 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 11-chiloralizosationalizosacetic 30 (EPFOSA) 1251-34 PFAS by ID SOP 3.8 U 7.6 3.8 0.9 ng/L 1 11-chiloralizosationalizo	Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
H. H. J. H. J. Pherhularoadecame sulfonic acid (8.2 FTS)	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
H.H. H. H. 2H. 2H-perfluoroectane sulfonic acid (4:2 FTS)	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
H-H-L-H-L-H-Lerfluorohexame sulfonic acid (1-2 FTS)	1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
Hexafluoroproprigene oxide dimer acid (GenX) 13252-13-6 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ngl. 1 4.8-dioxa-3H-perfluoronnanoic acid (ADONA) 1910005-14-2 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ngl. 1 1 1 1 1 1 1 1 1	1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
4.8 dioxa 3 H perfluorononanoia cidi (ADONA) 919005 -144 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 N-ethylperfluoro-1-octanesulfonamida (EIFOSA) 415150-2 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 N-ethylperfluoro-1-octanesulfonamida celic acid (EIFOSA) 2991-50- PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 N-methylperfluoro-1-octanesulfonamidaceatic acid (EIFOSA) 2355-31-9 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 N-methylperfluoro-1-octanesulfonamidaceatic acid (EIFOSA) 2355-31-9 PFAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 N-methylperfluoro-1-octanesulfonic acid (EIFOSA) 335-73-5 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-1-hotanesulfonic acid (EIFOSA) 335-73-8 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-1-hotanesulfonic acid (EIFOSA) 375-92-8 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-1-nonanesulfonic acid (EIFOSA) 375-92-8 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-1-nonanesulfonic acid (EIFOSA) 375-92-8 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-1-nonanesulfonic acid (EIFOSA) 375-92-8 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-hotanoic acid (EIFOSA) 375-92-8 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-hotanoic acid (EIFOSA) 375-92-8 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-hotanoic acid (EIFOSA) 375-92-8 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-hotanoic acid (EIFOSA) 375-92-8 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-hotanoic acid (EIFOSA) 375-92-8 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-hotanoic acid (EIFOSA) 375-92-9 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-hotanoic acid (EIFOSA) 375-92-9 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-n-dacianoic acid (EIFOSA) 375-92-9 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-dacianoic acid (EIFOSA) 375-92-9 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-dacianoic acid (EIFOSA) 375-92-9 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-dacianoic acid (EIFOSA) 375-92-9 PFAS by ID SOP 1.9 U 3.8 1.9 ng/S ng/L 1 Perfluoro-n-dacianoic acid (EIFOSA) 3	1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.8	UQ	7.6	3.8	1.9	ng/L	1
Nethylperfluoro-1-octanesulfonamide (EIFOSA)	Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (ReiFOSAN) 2991-50-6 PRAS by ID SOP 3.8 U 7.6 3.8 1.9 ng/L 1 N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSA) 235-51-9 PRAS by ID SOP 1.7 U 3.8 U 7.6 3.8 1.9 ng/L 1 Perfluoro-1-decanesulfonic acid (PFBS) 375-32-8 PRAS by ID SOP 1.7 U 3.8 1.9 0.95 ng/L 1 Perfluoro-1-decanesulfonic acid (PFBS) 375-32-8 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-1-decanesulfonic acid (PFBS) 375-32-8 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFBS) 75-2-8 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFBS) 75-2-8 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFBS) 75-2-8 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFBS) 75-2-4 PRAS by ID SOP 1.8 U 3.8 1.9 0.95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFBS) 75-2-4 PRAS by ID SOP 2.6 I 3.8 1.9 0.95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFBA) 75-2-4 PRAS by ID SOP 2.6 I 3.8 1.9 0.95 ng/L 1 Perfluoro-n-dodecanoic acid (PFDA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-dodecanoic acid (PFDA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-hexanoic acid (PFDA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-nonanoic acid (PFNA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFNA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFNA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFNA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFNA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFNA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFNA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFNA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFNA) 75-2-4 PRAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFNA) 75-2-4 PRA	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MEPGS)	N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS) : 375 - 73	N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-1-hoptanesulfonic acid (PFHpS) 375-92-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFNS) 325-91-21 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFNS) 355-46-4 PFAS by ID SOP 3.8 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-butanoic acid (PFNS) 355-46-4 PFAS by ID SOP 3.8 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 2.6 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-decanoic acid (PFDA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-decanoic acid (PFTDA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-decanoic acid (PFTDA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-decanoic acid (PFDA) 375-95-1 PFAS	N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHyS) 375-92-8 PFAS by ID SOP 1,9 U 3,8 1,9 0,95 ng/L 1 Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 1,9 U 3,8 1,9 0,95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFNS) 2706-91-4 PFAS by ID SOP 1,8 1 3,8 1,9 0,95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFRA) 335-46-4 PFAS by ID SOP 3,8 1,9 0,95 ng/L 1 Perfluoro-n-butanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1,9 U 3,8 1,9 0,95 ng/L 1 Perfluoro-n-doanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1,9 U 3,8 1,9 0,95 ng/L 1 Perfluoro-n-hopanoic acid (PFDA) 335-85-9 PFAS by ID SOP 1,9 U 3,8 1,9 0,95 ng/L 1 Perfluoro-n-hopanoic acid (PFIA) 335-75-2 PFAS by ID SOP 1,9 <th< td=""><td>Perfluoro-1-butanesulfonic acid (PFBS)</td><td>375-73-5</td><td>PFAS by ID SOP</td><td>1.7</td><td>1</td><td>3.8</td><td>1.9</td><td>0.95</td><td>ng/L</td><td>1</td></th<>	Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.7	1	3.8	1.9	0.95	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-10 PFAS by ID SOP 1,9 0 3,8 1,9 0,95 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFPRS) 2706-91-4 PFAS by ID SOP 1,4 1 3,8 1,9 0,95 ng/L 1 Perfluoro-nebutanoic acid (PFBA) 355-46-2 PFAS by ID SOP 2,6 1 3,8 1,9 0,95 ng/L 1 Perfluoro-nebutanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1,9 U 3,8 1,9 0,95 ng/L 1 Perfluoro-nedecanoic acid (PFDA) 3375-85-1 PFAS by ID SOP 1,9 U 3,8 1,9 0,95 ng/L 1 Perfluoro-nedecanoic acid (PFDA) 3375-85-1 PFAS by ID SOP 1,9 U 3,8 1,9 0,95 ng/L 1 Perfluoro-nedecanoic acid (PFHA) 3375-85-1 PFAS by ID SOP 1,9 U 3,8 1,9 0,95 ng/L 1 Perfluoro-nedicacid (PFNA) 335-67-1 PFAS by ID SOP	Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 1.4 I 1. 3.8 1.9 0.95 ng/L 1 Perfluoro-n-butanoic acid (PFHxS) 355-46-4 PFAS by ID SOP 3.8 . 3.8 1.9 0.95 ng/L 1 Perfluoro-n-becanoic acid (PFDA) 375-22-4 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-becanoic acid (PFDA) 375-25-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-becanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-becanoic acid (PFDA) 375-85-9 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-honanoic acid (PFHpA) 375-85-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-honanoic acid (PFHA) 375-85-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pontanoic acid (PFNA) 375-85-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pontanoic acid (PFDA) 375-85-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 375-85-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 375-85-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tidraceanoic acid (PFTDA) 376-27-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tidraceanoic acid (PFTDA) 376-27-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 376-27-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 376-27-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 376-27-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 376-27-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 376-27-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 376-27-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 376-27-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-by Name 1.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0	Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluorohexanesulfonic acid (PFHXS) 355-46-4 PFAS by ID SOP 3.8 1,9 0,95 ng/L 1 Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 2.6 1 3.8 1,9 0,95 ng/L 1 Perfluoro-n-butanoic acid (PFBA) 335-76-2 PFAS by ID SOP 1,9 0 3.8 1,9 0,95 ng/L 1 Perfluoro-n-dodecanoic acid (PFDA) 307-55-1 PFAS by ID SOP 1,9 0 3.8 1,9 0,95 ng/L 1 Perfluoro-n-heptanoic acid (PFHAA) 3375-95-1 PFAS by ID SOP 1,9 0 3.8 1,9 0,95 ng/L 1 Perfluoro-n-heptanoic acid (PFHAA) 3375-95-1 PFAS by ID SOP 1,9 0 3.8 1,9 0,95 ng/L 1 Perfluoro-n-bentancia acid (PFDA) 2375-95-1 PFAS by ID SOP 1,9 0 3.8 1,9 0,95 ng/L 1 Perfluoro-n-teltadecanoic acid (PFTDA) 376-29-1 PFAS by ID SOP 1,9 0	Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 2.6 I 3.8 1.9 0.95 ng/L 1 Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-dedecanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-dedecanoic acid (PFDA) 375-85-9 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-bexanoic acid (PFHAA) 375-85-9 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-bexanoic acid (PFHAA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-chanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-chanoic acid (PFDA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-chanoic acid (PFDA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 376-07-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFDA) 376-07-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFTDA) 376-08-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFTDA) 376-08-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFUdA) 72629-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFUdA) PFIDA 376-08-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFUdA) PFIDA 376-08-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFUdA) PFIDA 376-08-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFDA) PFIDA 376-08-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFDA) PFIDA 376-08-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFDA) PFIDA 376-08-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFDA) PFIDA 38-08-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFDA) PFIDA 38-08-94-8 PFAS by ID SOP 1.9 U 3.8 0.9 U 3.8 0.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFDA) PFIDA 39-095 ng/L 1 PERFLUORO-N-TRIDA 39-095 ng/L 1 PER	Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.4	1	3.8	1.9	0.95	ng/L	1
Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-dodecanoic acid (PFDA) 307-55-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-heptanoic acid (PFHA) 375-95-9 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-heptanoic acid (PFHA) 7375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-nonanoic acid (PFNA) 7375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-nonanoic acid (PFNA) 7375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-nonanoic acid (PFNA) 7375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 7375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFDA) 7376-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tertadecanoic acid (PFTDA) 7376-9-7 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tertadecanoic acid (PFTDA) 7376-9-7 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 7376-9-7 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFTDA) 746-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-trieradecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-trieradecanoic acid (PFUA) 756-9-3 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perflu	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	3.8		3.8	1.9	0.95	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA) 307-55-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-heptanoic acid (PFHpA) 307-24-4 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-heptanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-onanoic acid (PFOA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-pentanoic acid (PFOA) 375-97-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-teltradecanoic acid (PFTeDA) 376-07-7 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-teltradecanoic acid (PFTeDA) 76-05-3 PFAS by ID SOP	Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	2.6	1	3.8	1.9	0.95	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1	Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 1,9 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1,9 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-pentanoic acid (PFOA) 335-67-1 PFAS by ID SOP 1,3 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-pentanoic acid (PFPAA) 2706-90-3 PFAS by ID SOP 1,3 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-pentanoic acid (PFTAA) 376-06-7 PFAS by ID SOP 1,9 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-terdadecanoic acid (PFTAA) 72629-94-8 PFAS by ID SOP 1,9 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-terdadecanoic acid (PFUA) 2088-94-8 PFAS by ID SOP 1,9 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-terdadecanoic acid (PFUA) 2 N 163-2	Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 1,9 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1,9 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-pentanoic acid (PFOA) 335-67-1 PFAS by ID SOP 1,3 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-pentanoic acid (PFPAA) 2706-90-3 PFAS by ID SOP 1,3 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-pentanoic acid (PFTAA) 376-06-7 PFAS by ID SOP 1,9 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-terdadecanoic acid (PFTAA) 72629-94-8 PFAS by ID SOP 1,9 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-terdadecanoic acid (PFUA) 2088-94-8 PFAS by ID SOP 1,9 U 3.8 1,9 0,95 ng/L 1 Perfluoro-n-terdadecanoic acid (PFUA) 2 N 163-2	Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-n-onanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 1.3 I 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tetradecanoic acid (PFTeDA) 72629-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tetradecanoic acid (PFUDA) 2058-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Surrogate 2 N 188	Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95		1
Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-tridecanoic acid (PFTeDA) 72629-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Surrogate 2 Run 1 Acceptance 2 2 2 2 2 2 2 2 2 2 2 2 2 2 <t< td=""><td>Perfluoro-n-octanoic acid (PFOA)</td><td>335-67-1</td><td>PFAS by ID SOP</td><td>1.9</td><td>U</td><td>3.8</td><td>1.9</td><td>0.95</td><td></td><td>1</td></t<>	Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95		1
Perfluoro-n-tridecanoic acid (PFTrDA) 72629-94-8 bras by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 1763-23-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 Surrogate Q Run 1 Acceptance Limits V 3.8 1.9 0.95 ng/L 1 13C2_4:2FTS N 188 50-150 50-150 50-150 13C2_8:2FTS 107 50-150 50-150 50-150 13C2_PFDOA 86 50-150 50-150 13C3_PFBS 82 50-150 50-150 13C3_PFHxS 98 50-150 13C3_HFPO-DA 91 50-150 13C4_PFBA 57 50-150	Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.3	1	3.8	1.9	0.95	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1	Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 1 2 2 2 2 2 2 2 2	Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 1.9 U 3.8 1.9 0.95 ng/L 1 1 2 2 2 2 2 2 2 2	Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Surrogate Q % Recovery Limits 13C2_4:2FTS N 188 50-150 13C2_6:2FTS 130 50-150 13C2_PFDoA 86 50-150 13C2_PFTeDA 77 50-150 13C3_PFBS 82 50-150 13C3_PFHxS 98 50-150 13C3-HFPO-DA 91 50-150 13C4_PFBA 57 50-150	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95		1
13C2_6:2FTS 130 50-150 13C2_B:2FTS 107 50-150 13C2_PFDoA 86 50-150 13C2_PFTeDA 77 50-150 13C3_PFBS 82 50-150 13C3_PFHxS 98 50-150 13C3-HFPO-DA 91 50-150 13C4_PFBA 57 50-150	Surrogate Q % Re	covery Lir								
13C2_8:2FTS 107 50-150 13C2_PFDOA 86 50-150 13C2_PFTeDA 77 50-150 13C3_PFBS 82 50-150 13C3_PFHxS 98 50-150 13C3-HFPO-DA 91 50-150 13C4_PFBA 57 50-150										
13C2_PFDoA 86 50-150 13C2_PFTeDA 77 50-150 13C3_PFBS 82 50-150 13C3_PFHxS 98 50-150 13C3-HFPO-DA 91 50-150 13C4_PFBA 57 50-150	-									
13C2_PFTeDA 77 50-150 13C3_PFBS 82 50-150 13C3_PFHxS 98 50-150 13C3-HFPO-DA 91 50-150 13C4_PFBA 57 50-150	13C2_8:2FTS	107 50	-150							
13C3_PFBS 82 50-150 13C3_PFHxS 98 50-150 13C3-HFPO-DA 91 50-150 13C4_PFBA 57 50-150	13C2_PFDoA	86 50	-150							
13C3_PFHxS 98 50-150 13C3-HFPO-DA 91 50-150 13C4_PFBA 57 50-150	13C2_PFTeDA	77 50	-150							
13C3-HFPO-DA 91 50-150 13C4_PFBA 57 50-150	13C3_PFBS	82 50	-150							
13C4_PFBA 57 50-150	13C3_PFHxS	98 50	-150							
_	13C3-HFPO-DA	91 50	-150							
13C4_PFHpA 86 50-150	13C4_PFBA	57 50	-150							
	13C4_PFHpA	86 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

85

81

97

90

LOD = Limit of Detection

50-150

50-150

50-150

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Description: FS1-DPT0002-045.0-20220214

Date Sampled:02/14/2022 1555 Date Received: 02/16/2022

Laboratory ID: XB16023-012 Matrix: Aqueous

Project Name: KSC-FS1 Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	94	50-150
13C8_PFOS	92	50-150
13C9_PFNA	96	50-150
d-EtFOSA	68	50-150
d5-EtFOSAA	103	50-150
d3-MeFOSAA	96	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

I = Estimated result < LOQ and \geq DL

D = Dilution > 1

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech Laboratory ID: XB16023-013

Description: FS1-FB-20220215-01

Date Sampled:02/15/2022 0705 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/08/2022 1553 MMM 03/07/2022 1618 33989

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Rur
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	4.3	U	8.6	4.3	2.1	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3	.) 763051-92-9	PFAS by ID SOP	4.3	U	8.6	4.3	2.1	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	4.3	U	8.6	4.3	2.1	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	4.3	U	8.6	4.3	2.1	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	4.3	U	8.6	4.3	2.1	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	4.3	U	8.6	4.3	2.1	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	4.3	U	8.6	4.3	2.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	4.3	U	8.6	4.3	2.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	4.3	U	8.6	4.3	2.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	4.3	U	8.6	4.3	2.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.2	U	4.3	2.2	1.1	ng/L	1
F	Run 1 Accep	otance							
		nits							
13C2_4:2FTS		-150							
13C2_6:2FTS		-150							
13C2_8:2FTS		-150							
13C2_PFDoA		-150							
13C2_PFTeDA	89 50	-150							
13C3_PFBS	96 50	-150							
13C3_PFHxS	99 50	-150							
13C3-HFPO-DA	104 50	-150							
13C4_PFBA		-150							
13C4_PFHpA	93 50	-150							
13C5_PFHxA	92 50	-150							
13C5_PFPeA	95 50	-150							
13C6_PFDA	99 50	-150							
13C7_PFUdA	89 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

U = Not detected at or above the LOQ

Q = Out of holding time

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W = Reported on wet weight basis LOD = Limit of Detection

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Description: FS1-FB-20220215-01

Laboratory ID: XB16023-013

Date Sampled:02/15/2022 0705

Date Received: 02/16/2022

Project Name: KSC-FS1 Project Number: 112G09581 Matrix: Aqueous

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		95	50-150
13C8_PFOS		92	50-150
13C9_PFNA		102	50-150
d-EtFOSA		72	50-150
d5-EtFOSAA		111	50-150
d3-MeFOSAA		98	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-014

Description: FS1-DPT0003-005.0-20220215

Date Sampled:02/15/2022 0720 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch SOP SPE PFAS by ID SOP QSM B-15 03/08/2022 1604 MMM 03/07/2022 1618 33989

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	UQ	7.1	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3	763051-92-9	PFAS by ID SOP	3.6	UQ	7.1	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	UQ	7.1	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	UQ	3.5	1.8	0.88	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	UQ	3.5	1.8	0.88	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	3.6		3.5	1.8	0.88	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	7.4	Q	3.5	1.8	0.88	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	4.4	Q	3.5	1.8	0.88	ng/L	1
		otance mits							
13C2_4:2FTS N		-150							
13C2_6:2FTS	143 50	-150							
13C2_8:2FTS	118 50	-150							
13C2_PFDoA	87 50	-150							
13C2_PFTeDA	78 50	-150							
13C3_PFBS	88 50	-150							
13C3_PFHxS	96 50	-150							
13C3-HFPO-DA	93 50	-150							
13C4_PFBA N	49 50	-150							
13C4_PFHpA	93 50	-150							
13C5_PFHxA	94 50	-150							

LOQ = Limit of Quantitation V = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit Q = Surrogate failure U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and \geq DL L = LCS/LCSD failure LOD = Limit of Detection D = Dilution > 1 S = MS/MSD failure W = Reported on wet weight basis Q = Out of holding time

50-150

50-150

50-150

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13C5_PFPeA 13C6_PFDA

13C7_PFUdA

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86

100

91

Client: Tetra Tech

Description: FS1-DPT0003-005.0-20220215

Date Sampled:02/15/2022 0720 Date Received: 02/16/2022

Matrix: Aqueous

Laboratory ID: XB16023-014

Project Name: KSC-FS1 Project Number: 112G09581

		Run 1 A	Acceptance
Surrogate	Q	% Recovery	Limits
13C8_PFOA		98	50-150
13C8_PFOS	N	31	50-150
13C9_PFNA		99	50-150
d-EtFOSA		79	50-150
d5-EtFOSAA		108	50-150
d3-MeFOSAA		99	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

N = Recovery is out of criteria W = Reported on wet weight basis

P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-015

Description: FS1-EB-20220215-01

Run Prep Method

SOP SPE

Date Sampled:02/15/2022 0730 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

PFAS by ID SOP QSM B-15

Analytical Method Dilution Analysis Date Analyst Prep Date Batch

03/07/2022 1618 33989

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

03/08/2022 1615 MMM

Matrix: Aqueous

The Chicroeicus alburo -3-oxaum decume -1-sulfonic acid (FICE PF3) 763051-92-9 PFAS by ID SOP 4.4 U 8.7 4.4 2.2 mg/L	Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units Rur
H. H. J. 24. 24 perhuloroctacina sulfonic acid (6.2 FTS) 39108-344 PFAS by ID SOP 4.4 U 8.7 4.4 2.2 mg/L H. H. H. J. 24 perhuloroctacina sulfonic acid (6.2 FTS) 75114-724 PFAS by ID SOP 4.4 U 8.7 4.4 2.2 mg/L H. H. 24 perhulorochiciana sulfonic acid (6.2 FTS) 75114-724 PFAS by ID SOP 4.4 U 8.7 4.4 2.2 mg/L H. Mestlyperfluctoroproxylene oxide (idenor acid (Senon) 13323-136 PFAS by ID SOP 4.4 U 8.7 4.4 2.2 mg/L H. Mestlyperfluctoro-1-octanesulfonamida (EIFOSA) 1411-1502 PFAS by ID SOP 4.4 U 8.7 4.4 2.2 mg/L N. Hetyperfluctor-1-octanesulfonamidacetic acid (EIFOSA) 2991-504 PFAS by ID SOP 4.4 U 8.7 4.4 2.2 mg/L N. Hetyperfluctor-1-octanesulfonamidacetic acid (EIFOSA) 2375-314 PFAS by ID SOP 4.4 U 8.7 4.4 2.2 mg/L N. Hetyperfluctor-1-octanesulfonamidacetic acid (EIFOSA) 2375-314 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-dividanesulfonic acid (PFBS) 375-735 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-dividanesulfonic acid (PFBS) 375-734 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-dividanesulfonic acid (PFBS) 375-735 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-dividanesulfonic acid (PFBS) 375-735 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-dividanesulfonic acid (PFBS) 375-735 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-dividanesulfonic acid (PFBS) 375-735 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-dividanesulfonic acid (PFBS) 375-735 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-dividanesulfonic acid (PFBA) 375-735 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-dividanesulfonic acid (PFBA) 375-735 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-dividanesulfonic acid (PFBA) 375-735 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 mg/L Perfluctor-1-divi	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	4.4 U	8.7	4.4	2.2	ng/L 1
H. H. Lett. July perfluorocation sulfont acid (62 FTS) 276 July - 175 Jul	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	4.4 U	8.7	4.4	2.2	ng/L 1
H-1H-1D-1P-perfluorcheame sulfonic acid (G4-2FTS) 7571-4-7-24 PFAS by ID SOP 4.4 U 8.7 4.4 2.2 ngl.	1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	4.4 U	8.7	4.4	2.2	ng/L 1
Headinoprophylene oxide dimer acid (GenX)	1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	4.4 U	8.7	4.4	2.2	ng/L 1
4,8 dox 3 d per fluor concensor cad (ADONA) 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-2 4,151-50-3 4,151-50-2 4,151-50-3 4,151-50-2 4,151-50-3 4,151-50-2 4,151-50-3 4,101-3	1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	4.4 U	8.7	4.4	2.2	ng/L 1
Nethyplerfluoro-1-octanesulfonamida (EIFOSA)	Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	4.4 U	8.7	4.4	2.2	ng/L 1
Neathylperfluoro-1-octanesulfonamidaacetic acid (NeFOSA+) 2991-80+ PRAS by ID SOP 4.4 U 8.7 4.4 22 ng/L Neathylperfluoro-1-octanesulfonamidaacetic acid (NeFOSA+) 2355-31+ PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-1-decanesulfonic acid (PFBS) 3357-37- PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-1-heptanesulfonic acid (PFIDS) 3357-37- PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-1-pentanesulfonic acid (PFIDS) 68259-12-1 PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-1-pentanesulfonic acid (PFIDS) 797-52-4 PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-1-pentanesulfonic acid (PFIDS) 797-52-4 PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-1-pentanesulfonic acid (PFIDA) 797-52-4 PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-52-4 PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-52-4 PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-52-4 PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-58-59 PRAS by ID SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-58-59 798-59 10 SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-58-59 798-59 10 SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-59 798-59 10 SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-59 798-59 10 SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-59 798-59 10 SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-59 798-59 10 SOP 2.2 U 4.3 2.2 1.11 ng/L Perfluoro-n-decanoic acid (PFIDA) 797-59 798-59 798-59 798-59 798-59 798-59 798-59 798-59 798-59 798-59 798-59 798-59 798-59 79	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	4.4 U	8.7	4.4	2.2	ng/L 1
Nembly/perfluoro-1-octanesulfonamidoacetic acid (MeFOSA)	N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	4.4 U	8.7	4.4	2.2	ng/L 1
Perfluoro 1-butanesulfonic acid (PFBS) 335-73 PFAS by ID SOP 22 U 4.3 2.2 1.1 ng/L	N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	4.4 U	8.7	4.4	2.2	ng/L 1
Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L	N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	4.4 U	8.7	4.4	2.2	ng/L 1
Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L	Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5		2.2 U	4.3	2.2	1.1	ng/L 1
Perfluoro-1-heptanesulfonic acid (PFHpS) 375-92-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L	Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3		2.2 U	4.3		1.1	ng/L 1
Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L	Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8		2.2 U			1.1	-
Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-48 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-hexanesulfonic acid (PFHS) 375-22-4 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-decanoic acid (PFDA) 375-22-4 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-decanoic acid (PFDA) 307-55-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-decanoic acid (PFDA) 307-24-4 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-hexanoic acid (PFHA) 307-24-4 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-chexanoic acid (PFNA) 335-67-7 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-chancic acid (PFDA) 375-67-7 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L			•	2.2 U				-
Perfluorohexanesulfonic acid (PFHxS) 355-4-64 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-bulanoic acid (PFBA) 375-22-4 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-decanoic acid (PFDA) 375-85-9 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-beptanoic acid (PFHxA) 375-85-9 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-betanoic acid (PFHxA) 3375-95-1 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-betanoic acid (PFDA) 3375-95-1 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-betanoic acid (PFDA) 3375-95-1 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L	• • •		•					-
Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-decanoic acid (PFDA) 3375-85-9 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-heptanoic acid (PFHA) 3375-85-9 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-heptanoic acid (PFHA) 3375-95-1 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-broancia acid (PFNA) 335-95-1 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-bridaccanoic acid (PFPOA) 335-67-1 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L Perfluoro-n-bridacanoic acid (PFTDA) 702-29-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1,1 ng/L	•		•					
Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-dedecanoic acid (PFDA) 307-55-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-heptanoic acid (PFHA) 375-85-9 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-hexanoic acid (PFNA) 375-95-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-nonanoic acid (PFNA) 335-67-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-catanic acid (PFOA) 335-67-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-tetradecanoic acid (PFTeA) 376-06-7 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-tetradecanoic acid (PFTeA) 72629-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L			•					
Perfluoro-n-dodecanolic acid (PFDA) 307-55-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-heptanolic acid (PFHAA) 375-85-9 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-hexanolic acid (PFHAA) 375-85-9 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-branancia cid (PFNA) 375-85-9 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-brandic acid (PFOA) 375-85-7 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-brandic acid (PFPAA) 376-95-7 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-bridecanolic acid (PFTDA) 725-37-98-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-bridecanolic acid (PFDA) 2 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L <td></td> <td></td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td>•</td>			•					•
Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-benanoic acid (PFNA) 375-95-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-bentanoic acid (PFOA) 335-67-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-bentanoic acid (PFPA) 200-376-67-7 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-betradecanoic acid (PFTEDA) 726-29-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-betradecanoic acid (PFTEDA) 726-29-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-betradecanoic acid (PFTEDA) 200-30-20-20-20-20-20-20-20-20-20-20-20-20-20	· · · ·		•					
Perfluoro-n-hexanoic acid (PFNA) 307-244 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-potanoic acid (PFNA) 375-97-7 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-pidradecanoic acid (PFPA) 376-0-7 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-teiradecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 107629-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L	· · · ·		•					•
Perfluoro-n-nonancia caid (PFNA) 375-91 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-petrancia caid (PFPAA) 2706-90-3 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-tetradecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-tetradecanoic acid (PFUDA) 72629-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUDA) 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUDA) 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUDA) 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L <td></td> <td></td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td></td>			•					
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Perfluoro-n-pentlanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-tetradecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-22-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L	• •		•					-
Perfluoro-n-teitradecanoic acid (PFTeDA) 376-0-7 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-tridecanoic acid (PFTeDA) 72629-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 1763-23-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 1763-23-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Surrogate PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L 33C2_4:2FTS 120 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150	·		•					
Perfluoro-n-tridecanoic acid (PFTrDA) 72629-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Perfluorocotanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Surrogate 2 Run 1 Acceptance PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Surrogate 2 Run 1 Acceptance PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Surrogate 2 Run 1 Acceptance PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Surrogate 2 Run 1 Acceptance PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L Surrogate 2 Recovery 1.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5	·		*					
Perfluoro-n-undecanoic acid (PFUdA) Perfluorooctanesulfonic acid (PFUdA) Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L 1763-23-1 PFAS by ID SOP 2.2 U 4.3 2.2 U 4.3 2.2 1.1 ng/L 1.1 ng/	• • •							
Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 2.2 U 4.3 2.2 1.1 ng/L	·		•					
Surrogate Q Recovery Limits 13C2_4:2FTS 120 50-150 13C2_8:2FTS 77 50-150 13C2_PFDoA 97 50-150 13C2_PFTeDA 88 50-150 13C3_PFBS 100 50-150 13C3_PFHxS 100 50-150 13C3_PFHxS 100 50-150 13C3_PFBA 98 50-150 13C4_PFBA 98 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C5_PFPEA 98 50-150 13C5_PFPEA 98 50-150 13C5_PFPEA 98 50-150 13C6_PFDA 102 50-150			•					
Surrogate Q % Recovery Limits 13C2_4:2FTS 120 50-150 13C2_6:2FTS 77 50-150 13C2_PFDoA 97 50-150 13C2_PFTeDA 88 50-150 13C3_PFBS 100 50-150 13C3_PFHxS 100 50-150 13C3_PFPO-DA 108 50-150 13C4_PFBA 98 50-150 13C4_PFHpA 96 50-150 13C5_PFPAA 98 50-150 13C5_PFPEA 98 50-150 13C6_PFDA 102 50-150	Periluorooctanesullonic acid (PFOS)	1/03-23-1	PFAS BY ID SOP	2.2 U	4.3	2.2	1.1	ng/L 1
13C2_4:2FTS 120 50-150 13C2_6:2FTS 77 50-150 13C2_PFDOA 97 50-150 13C2_PFTeDA 88 50-150 13C3_PFBS 100 50-150 13C3_PFHxS 100 50-150 13C3-HFPO-DA 108 50-150 13C4_PFBA 98 50-150 13C4_PFHpA 96 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150	Surrogate R Q % Re	un 1 Accep ecovery Lir						
13C2_8:2FTS 117 50-150 13C2_PFDoA 97 50-150 13C2_PFTeDA 88 50-150 13C3_PFBS 100 50-150 13C3_PFHxS 100 50-150 13C3_HFPO-DA 108 50-150 13C4_PFBA 98 50-150 13C4_PFHpA 96 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150			-150					
13C2_PFDoA 97 50-150 13C2_PFTeDA 88 50-150 13C3_PFBS 100 50-150 13C3_PFHxS 100 50-150 13C3-HFPO-DA 108 50-150 13C4_PFBA 98 50-150 13C4_PFHpA 96 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150	13C2_6:2FTS	77 50	-150					
13C2_PFTeDA 88 50-150 13C3_PFBS 100 50-150 13C3_PFHxS 100 50-150 13C3-HFPO-DA 108 50-150 13C4_PFBA 98 50-150 13C4_PFHpA 96 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150	13C2_8:2FTS	117 50	-150					
13C3_PFBS 100 50-150 13C3_PFHxS 100 50-150 13C3-HFPO-DA 108 50-150 13C4_PFBA 98 50-150 13C4_PFHpA 96 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150	13C2_PFDoA	97 50	-150					
13C3_PFHxS 100 50-150 13C3-HFPO-DA 108 50-150 13C4_PFBA 98 50-150 13C4_PFHpA 96 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150	13C2_PFTeDA	88 50	-150					
13C3_PFHxS 100 50-150 13C3-HFPO-DA 108 50-150 13C4_PFBA 98 50-150 13C4_PFHpA 96 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150	13C3_PFBS	100 50	-150					
13C3-HFPO-DA 108 50-150 13C4_PFBA 98 50-150 13C4_PFHpA 96 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150								
13C4_PFBA 98 50-150 13C4_PFHpA 96 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150			-150					
13C4_PFHpA 96 50-150 13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150								
13C5_PFHxA 96 50-150 13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150	_							
13C5_PFPeA 98 50-150 13C6_PFDA 102 50-150	•							
13C6_PFDA 102 50-150								
13C7_PFUdA 95 50-150	13C7_PFUdA							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

W = Reported on wet weight basis LOD = Limit of Detection

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Description: FS1-EB-20220215-01

Date Sampled:02/15/2022 0730 Project Name: KSC-FS1
Date Received: 02/16/2022 Project Number: 112G09581

Laboratory ID: XB16023-015

Matrix: Aqueous

Surrogate	Run 1 Acceptance Q % Recovery Limits
13C8_PFOA	96 50-150
13C8_PFOS	94 50-150
13C9_PFNA	104 50-150
d-EtFOSA	77 50-150
d5-EtFOSAA	113 50-150
d3-MeFOSAA	100 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-016

Description: FS1-DPT0003-012.0-20220215

Date Sampled:02/15/2022 0740 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581 Matrix: Aqueous

I = Estimated result < LOQ and \geq DL

D = Dilution > 1

L = LCS/LCSD failure

S = MS/MSD failure

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Bat	tch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/08/2022 1625 MMM	03/07/2022 1618 339	989

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Rur
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	7.9	J	3.7	1.9	0.92	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	8.6		3.7	1.9	0.92	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	•	1.9	U	3.7			-	1
, ,		PFAS by ID SOP				1.9	0.92	ng/L	
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.9	I	3.7	1.9	0.92	ng/L	1
R Surrogate Q % Re		otance mits							
		-150							
_		-150							
		-150							
13C2 PFDoA		-150							
13C2_PFTeDA		-150							
13C3_PFBS		-150							
13C3_PFHxS		-150							
13C3-HFPO-DA		-150							
13C4_PFBA 13C4_PFHpA		-150 -150							
13C5_PFHxA									
-		-150							
13C5_PFPeA		-150							
13C6_PFDA		-150							
13C7_PFUdA	85 50	-150							

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106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Date Received: 02/16/2022

Description: FS1-DPT0003-012.0-20220215

Date Sampled:02/15/2022 0740 Project Name: KSC-FS1

Laboratory ID: XB16023-016 Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	89	50-150
13C8_PFOS	87	50-150
13C9_PFNA	95	50-150
d-EtFOSA	69	50-150
d5-EtFOSAA	103	50-150
d3-MeFOSAA	90	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ \underline{>} \ DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

03/08/2022 1636 MMM

Client: Tetra Tech Laboratory ID: XB16023-017

Description: FS1-DPT0003-017.0-20220215

Run Prep Method

SOP SPE

Date Sampled:02/15/2022 0800 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

PFAS by ID SOP QSM B-15

Analytical Method Dilution Analysis Date Analyst Prep Date Batch

03/07/2022 1618 33989

Matrix: Aqueous

Parameter	CAS Number	Analytical Method	Result		LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
$\hbox{11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)}\\$	763051-92-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.4	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	3.1	1	3.7	1.9	0.92	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	15		3.7	1.9	0.92	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	0.98	1	3.7	1.9	0.92	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.1	1	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	5.3		3.7	1.9	0.92	ng/L	1
		otance mits							
		-150							
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·		-150							
		-150 -150							
13C6_PFDA	106 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

99

LOD = Limit of Detection

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-DPT0003-017.0-20220215

Date Sampled:02/15/2022 0800 Date Received: 02/16/2022 Laboratory ID: XB16023-017

Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	cceptance Limits			
13C8_PFOA	96	50-150			
13C8_PFOS	97	50-150			
13C9_PFNA	104	50-150			
d-EtFOSA	78	50-150			
d5-EtFOSAA	112	50-150			
d3-MeFOSAA	101	50-150			

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: XB16023-018

Description: FS1-DPT0003-025.0-20220215

Date Sampled:02/15/2022 0825 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/09/2022 1640 JJG 03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS	5) 756426-58-1	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3) 763051-92-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.4	I	3.6	1.8	0.91	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	5.0		3.6	1.8	0.91	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	21		3.6	1.8	0.91	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.1	I	3.6	1.8	0.91	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.3	I	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	I	3.6	1.8	0.91	ng/L	1
	Run 1 Accep	otance mits						Ü	
13C2_4:2FTS N	187 50	-150							
13C2_6:2FTS	104 50	-150							
13C2_8:2FTS	104 50	-150							
13C2_PFDoA	84 50	-150							
13C2_PFTeDA	65 50	-150							
13C3_PFBS	86 50	-150							
13C3_PFHxS	89 50	-150							
13C3-HFPO-DA	94 50	-150							
13C4_PFBA	57 50	-150							
13C4_PFHpA	96 50	-150							
13C5_PFHxA	93 50	-150							

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

50-150

50-150

50-150

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13C5_PFPeA 13C6_PFDA

13C7_PFUdA

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85

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89

Client: Tetra Tech

Description: FS1-DPT0003-025.0-20220215

Project Name: KSC-FS1

Date Sampled:02/15/2022 0825

Project Number: 112G00581

Laboratory ID: XB16023-018

Matrix: Aqueous

Date Received: 02/16/2022 Project Number: 112G09581

Run 1 Acceptance

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	91	50-150
13C8_PFOS	91	50-150
13C9_PFNA	94	50-150
d-EtFOSA	63	50-150
d5-EtFOSAA	91	50-150
d3-MeFOSAA	92	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ \underline{>} \ DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-019

Description: FS1-DPT0003-035.0-20220215

Date Sampled:02/15/2022 0855 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581

I = Estimated result < LOQ and ≥ DL

D = Dilution > 1

L = LCS/LCSD failure S = MS/MSD failure

Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batc	h
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/08/2022 1647 MMM	03/07/2022 1618 3398	9

4-chloroheadecalutura 3-avanona-suatonica add (PEPS-NUS) 75456-814 PFAS by ID SOP 3.7 U 7.3 3.7 1.8 ngl. IH. H.4.24 2H-perfluorooclane sulfonic add (22 FTS) 37108-344 PFAS by ID SOP 3.7 U 7.3 3.7 1.8 ngl. IH. H.1.24 2H-perfluorooclane sulfonic add (42 FTS) 2719-19-72 PFAS by ID SOP 3.7 U 7.3 3.7 1.8 ngl. HH.1.41 2H-12-perfluorooclane sulfonic add (42 PTS) 2719-19-72 PFAS by ID SOP 3.7 U 7.3 3.7 1.8 ngl. Hesafluoro-Hocane sulfonic add (4DONA) 1325-13-6 PFAS by ID SOP 3.7 U 7.3 3.7 1.8 ngl. Nethylperfluoro-Hocane sulfonic add (4DONA) 4151-50-2 PFAS by ID SOP 3.7 U 7.3 3.7 1.8 ngl. Nethylperfluoro-Hocane sulfonic add (4DONA) 491-50-5 PFAS by ID SOP 3.7 U 7.3 3.7 1.8 ngl. Perfluoro-Hocane sulfonic add (4DENA) 375-52-5 PFAS by ID SOP 3.7 U	Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
H. H. 2H. 2H. perfluorodecane sulfonic acid (8L° EFS) 1. H. P. H. 2H. perfluorocotane sulfonic acid (6L° ETS) 2. 2715 972 978.5 by 10 SOP 3.7 0.7 3.3 3.7 1.8 ngl. H. H. 2H. 2H. perfluorocotane sulfonic acid (6L° ETS) 3. 2715 978.5 by 10 SOP 3.7 0.7 3.3 3.7 1.8 ngl. H. 2H. 2H. perfluorocotane sulfonic acid (4L° ETS) 3. 3.7 1.8 ngl. H. 2H. 2H. perfluorocotane sulfonic acid (4L° ETS) 4. 8 (alous 3H. perfluoroconanolos acid (4DONA) 4. 8 (alous 3H. perfluoroconanolos acid (4DONA) 4. 8 (alous 3H. perfluorocotanesulfonamidia (EIFOSA) 4. 8 (alous 3H. perfluorocotanesulfonic acid (EIFOSA) 4. 9 (alous 3H. perfluorocotanesulfonic acid (EIFO	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
H. H. H. ZH. ZH-perflutronectaine sulfonic acid (62 FTS) 7571 24 724 PEAS by ID SOP 3.7 0.0 7.3 3.7 1.8 ngL	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Hill-Lift-Lift-erfluorohexane sulfonic acid (42 FTS)	1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
4.8-dloxa-3H-perfluoronanolic acid (ADONA) 919005-14-4 PAS by ID SOP 3.7 U 7.3 3.7 1.8 ng/L Nethyperfluoro-1-octanesulfonamide (EIFOSA) 4151-502 PASS by ID SOP 3.7 U 7.3 3.7 1.8 ng/L Nethyperfluoro-1-octanesulfonamidacelic acid (EIFOSA) 2355-31-9 PASS by ID SOP 3.7 U 7.3 3.7 1.8 ng/L Nethyperfluoro-1-octanesulfonamidacelic acid (EIFOSA) 2355-31-9 PASS by ID SOP 3.7 U 7.3 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonamidacelic acid (EIFOSA) 3357-73-9 PASS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDS) 3357-73-9 PASS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDS) 3359-73-9 PASS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDS) 3359-74-9 PASS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDS) 3359-74-9 PASS by ID SOP 3.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDS) 3359-74-9 PASS by ID SOP 3.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDS) 3359-74-9 PASS by ID SOP 3.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDA) 3359-74-9 PASS by ID SOP 3.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDA) 3379-8-9 PASS by ID SOP 3.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDA) 3379-8-9 PASS by ID SOP 3.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDA) 3359-8-9 PASS by ID SOP 3.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDA) 3359-8-9 PASS by ID SOP 3.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDA) 3359-8-9 PASS by ID SOP 3.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDA) 3359-8-9 PASS by ID SOP 3.9 U 3.7 1.9 0.92 ng/L Perfluoro-1-octanesulfonic acid (PEDA) 3359-8-9 PASS by ID SOP 3.9 U 3.7 1.9 0.9	1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
Nethylperfluoro-1-octanesulfonamide (EFOSA)	Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Nethylperfluoro-1-octanesulfonamidoacetic acid (RieF US-A)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Namethylserfluoro-1-octanesulfonamidoscetic acid (MeFUS) 2355-31-9 PFAS by ID SOP 3.7 0. 3.7 1.9 0.92 0.94	N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS) 375-73-5 PFAS by ID SOP 1.4 1 3.7 1.9 0.92 ng/L	N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro 1-decanesulfonic acid (PFDS) 335-73-3 PAS by ID SOP 1,9 US 3,7 1,9 0,92 ng/L Perfluoro 1-heplanesulfonic acid (PFNS) 68259-12-1 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-1-pentanesulfonic acid (PFNS) 768259-12-1 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-1-pentanesulfonic acid (PFNS) 355-46-4 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-1-pentanesulfonic acid (PFNS) 355-46-4 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-decanoic acid (PFNA) 335-76-2 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-hepatanoic acid (PFNA) 335-76-2 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-hepatanoic acid (PFNA) 337-85-1 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-hepatanoic acid (PFNA) 337-85-1 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-noctanoic acid (PFNA) 335-75-1 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-pentanoic acid (PFNA) 335-75-1 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-pentanoic acid (PFNA) 335-75-1 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-pentanoic acid (PFPAA) 376-95-8 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-tirdecanoic acid (PFTeAA) 376-95-8 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-tirdecanoic acid (PFTeAA) 376-95-8 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-tirdecanoic acid (PFTeAA) 376-95-8 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-tirdecanoic acid (PFTeAA) 376-95-8 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-tirdecanoic acid (PFTeAA) 376-95-8 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-tirdecanoic acid (PFTeAA) 376-95-8 PAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perf	N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS) 68259-12-1 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L	Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.4	1	3.7	1.9	0.92	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L	Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	US	3.7	1.9	0.92	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-1-butanoic acid (PFHxS) 355-46-4 PFAS by ID SOP 4.8 3,7 1,9 0,92 ng/L Perfluoro-n-butanoic acid (PFDA) 335-36-2 PFAS by ID SOP 51 U 3,7 1,9 0,92 ng/L Perfluoro-n-decanoic acid (PFDA) 335-36-2 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-decanoic acid (PFDA) 335-36-2 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-heptanoic acid (PFHpA) 375-35-1 PFAS by ID SOP 1,1 U 3,7 1,9 0,92 ng/L Perfluoro-n-heptanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 1,1 U 3,7 1,9 0,92 ng/L Perfluoro-n-heptanoic acid (PFNA) 335-36-1 PFAS by ID SOP 1,1 U 3,7 1,9 0,92 ng/L Perfluoro-n-pentanoic acid (PFDA) 335-36-1 PFAS by ID SOP 1,1 U 3,7 1,9 0,92 ng/L Perfluoro-n-pentanoic acid (PFDA) 335-36-1 PFAS by ID SOP 1,1 U 3,7 1,9 0,92 ng/L Perfluoro-n-pentanoic acid (PFDA) 376-36-7 PFAS by ID SOP 1,1 U 3,7 1,9 0,92 ng/L Perfluoro-n-iteradecanoic acid (PFTeDA) 376-36-7 PFAS by ID SOP 1,1 U 3,7 1,9 0,92 ng/L Perfluoro-n-iteradecanoic acid (PFTeDA) 376-36-7 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-iteradecanoic acid (PFTeDA) 376-32-1 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-iteradecanoic acid (PFTeDA) 376-32-1 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-iteradecanoic acid (PFTeDA) 376-32-1 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-iteradecanoic acid (PFTeDA) 376-32-1 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-iteradecanoic acid (PFTeDA) 376-32-1 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-iteradecanoic acid (PFTeDA) 376-32-1 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L Perfluoro-n-iteradecanoic acid (PFTeDA) 376-32-1 PFA	Perfluoro-1-heptanesulfonic acid (PFHpS)		PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 1,9 U 3,7 1,9 0,92 ng/L	Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7		0.92	-	1
Perfluoro-heutanoic acid (PFHxS) 355-46 PFAS by ID SOP 4.8 3.7 1.9 0.92 ng/L	• • •	2706-91-4	•	1.9	U	3.7		0.92	-	1
Perfluoro-n-butanolic acid (PFBA) 375-22-4 PFAS by ID SOP 51 Q 3.7 1.9 0.92 ng/L Perfluoro-n-decanolic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-decanolic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-heptanolic acid (PFHA) 375-95-9 PFAS by ID SOP 1.1 1 3.7 1.9 0.92 ng/L Perfluoro-n-hexanolic acid (PFNA) 375-95-1 PFAS by ID SOP 1.1 1 3.7 1.9 0.92 ng/L Perfluoro-n-bexanolic acid (PFNA) 335-67-1 PFAS by ID SOP 1.1 1 3.7 1.9 0.92 ng/L Perfluoro-n-bexanolic acid (PFPA) 335-67-1 PFAS by ID SOP 1.1 1 3.7 1.9 0.92 ng/L Perfluoro-n-bexanolic acid (PFPA) 375-69-5 PFAS by ID SOP 1.9 0 3.7 1.9 0.92 ng/L	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	•	4.8		3.7				1
Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-decanoic acid (PFDA) 375-85-9 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-hexanoic acid (PFHAA) 375-85-9 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L Perfluoro-n-hexanoic acid (PFHAA) 375-85-9 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L Perfluoro-n-hexanoic acid (PFHAA) 375-85-1 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L Perfluoro-n-bexanoic acid (PFBAA) 375-95-1 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L Perfluoro-n-oncanoic acid (PFDAA) 375-95-1 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L Perfluoro-n-oncanoic acid (PFDAA) 375-95-1 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L Perfluoro-n-perfluoro-n-betradecanoic acid (PFDAA) 375-95-1 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L Perfluoro-n-tetradecanoic acid (PFDAA) 376-67 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L Perfluoro-n-tetradecanoic acid (PFDAA) 376-67 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFDAA) 72629-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.0 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUAA) PFAS by ID SOP 1.0 U 3.7	• • • •	375-22-4	•	51	Q	3.7			-	1
Perfluoro-n-dodecanoic acid (PFDA) 307-55-1 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L	· · · ·		,						-	1
Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 1.1 1 3.7 1.9 0.92 ng/L	, ,		,						-	1
Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 2.7 I 3.7 1.9 0.92 ng/L Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L Perfluoro-n-petranoic acid (PFPA) 376-67-7 PFAS by ID SOP 1.3 I 3.7 1.9 0.92 ng/L Perfluoro-n-teiradecanoic acid (PFTrDA) 726-29-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-teiradecanoic acid (PFTrDA) 726-29-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUdA) 205-8-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUdA) 205-8-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L <td>, ,</td> <td></td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>1</td>	, ,		•						-	1
Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L Perfluoro-n-pentanoic acid (PFPA) 2706-90-3 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-teltradecanoic acid (PFTDA) 376-06-7 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-teltradecanoic acid (PFTDA) 76269-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUdA) 1763-23-1 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-teltradecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L<	1 , 1 ,		•						-	1
Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 1.1 I 3.7 1.9 0.92 ng/L	·		•						-	1
Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 3.3 I 3.7 1.9 0.92 ng/L	· · · · ·		•						-	1
Perfluoro-n-teitadecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L			•						-	1
Perfluoro-n-tridecanoic acid (PFTrDA) 72629-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 5.0 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 5.0 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 5.0 3.7 1.9 0.92 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 5.0 3.7 1.9 0.92 ng/L Burn 1 Acceptance PFAS by ID SOP 5.0 3.7 1.9 0.92 ng/L Surrogate Q Recovery Sol-150 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 <t< td=""><td>•</td><td></td><td>•</td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>1</td></t<>	•		•						-	1
Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.9 U 3.7 1.9 0.92 ng/L Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 5.0 3.7 1.9 0.92 ng/L Surrogate Q Run 1 Recovery Acceptance N 192 50-150 13C2_4:2FTS N 192 50-150 50-150 50-150 13C2_6:2FTS 109 50-150 50-150 50-150 13C2_PFDDA 89 50-150 50-150 50-150 13C3_PFBS 83 50-150 50-150 50-150 13C3_PFHxS 94 50-150 50-150 50-150 13C4_PFBA N 44 50-150 50-150 13C4_PFHpA 90 50-150 50-150 13C5_PFHxA 86 50-150 13C5_PFPPA 76 50-150 13C6_PFDA 94 50-150	· · · · · · · · · · · · · · · · · · ·		•						-	1
Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 5.0 3.7 1.9 0.92 ng/L Run 1 Acceptance Limits 13C2_4:2FTS N 192 50-150 13C2_6:2FTS 124 50-150 13C2_8:2FTS 109 50-150 13C2_PFDOA 89 50-150 13C2_PFTeDA 75 50-150 13C3_PFBS 83 50-150 13C3_PFBS 83 50-150 13C3_PFBS 94 50-150 13C3_PFBA N 44 50-150 13C4_PFBA N 44 50-150 13C4_PFBA N 44 50-150 13C5_PFHxA 86 50-150 13C5_PFPAA 86 50-150 13C5_PFPAA 90 50-150	·		•						-	1
Surrogate Q % Recovery Limits 13C2_4:2FTS N 192 50-150 13C2_6:2FTS 124 50-150 13C2_PFDoA 89 50-150 13C2_PFTeDA 75 50-150 13C3_PFBS 83 50-150 13C3_PFHxS 94 50-150 13C3_PFPO-DA 83 50-150 13C4_PFBA N 44 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150	· · · ·		•		O				-	1
13C2_4:2FTS N 192 50-150 13C2_6:2FTS 124 50-150 13C2_8:2FTS 109 50-150 13C2_PFDOA 89 50-150 13C2_PFTeDA 75 50-150 13C3_PFBS 83 50-150 13C3_PFHxS 94 50-150 13C3_HFPO-DA 83 50-150 13C4_PFBA N 44 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150	R	un 1 Acce	otance							
13C2_6:2FTS 124 50-150 13C2_8:2FTS 109 50-150 13C2_PFDOA 89 50-150 13C2_PFTeDA 75 50-150 13C3_PFBS 83 50-150 13C3_PFHxS 94 50-150 13C3-HFPO-DA 83 50-150 13C4_PFBA N 44 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150										
13C2_8:2FTS 109 50-150 13C2_PFDoA 89 50-150 13C2_PFTeDA 75 50-150 13C3_PFBS 83 50-150 13C3_PFHxS 94 50-150 13C3-HFPO-DA 83 50-150 13C4_PFBA N 44 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150										
13C2_PFDOA 89 50-150 13C2_PFTeDA 75 50-150 13C3_PFBS 83 50-150 13C3_PFHxS 94 50-150 13C3-HFPO-DA 83 50-150 13C4_PFBA N 44 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150										
13C2_PFTeDA 75 50-150 13C3_PFBS 83 50-150 13C3_PFHxS 94 50-150 13C3-HFPO-DA 83 50-150 13C4_PFBA N 44 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150	_	109 50	-150							
13C3_PFBS 83 50-150 13C3_PFHxS 94 50-150 13C3-HFPO-DA 83 50-150 13C4_PFBA N 44 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150	13C2_PFDoA	89 50	-150							
13C3_PFHxS 94 50-150 13C3-HFPO-DA 83 50-150 13C4_PFBA N 44 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150	13C2_PFTeDA	75 50	-150							
13C3-HFPO-DA 83 50-150 13C4_PFBA N 44 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150	13C3_PFBS	83 50	-150							
13C4_PFBA N 44 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150	13C3_PFHxS	94 50	-150							
13C4_PFHpA 90 50-150 13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150	13C3-HFPO-DA	83 50	-150							
13C5_PFHxA 86 50-150 13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150	13C4_PFBA N	44 50	-150							
13C5_PFPeA 76 50-150 13C6_PFDA 94 50-150	13C4_PFHpA	90 50	-150							
13C6_PFDA 94 50-150	13C5_PFHxA	86 50	-150							
	13C5_PFPeA	76 50	-150							
	13C6_PFDA	94 50	-150							
13C7_PFUdA 92 50-150	13C7_PFUdA	92 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Q = Out of holding time

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40%

W = Reported on wet weight basis LOD = Limit of Detection

Client: Tetra Tech

Description: FS1-DPT0003-035.0-20220215

Date Sampled:02/15/2022 0855 Projection

Date Received: 02/16/2022

Project Name: KSC-FS1
Project Number: 112G09581

Laboratory ID: XB16023-019

Matrix: Aqueous

Surrogate	Run 1 Acceptance Q % Recovery Limits
13C8_PFOA	92 50-150
13C8_PFOS	90 50-150
13C9_PFNA	98 50-150
d-EtFOSA	66 50-150
d5-EtFOSAA	105 50-150
d3-MeFOSAA	97 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-020

Description: FS1-DPT0003-045.0-20220215

Date Sampled:02/15/2022 0925 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

Matrix: Aqueous Project Name: KSC-FS1

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/09/2022 1651 JJG 03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
		otance mits							
13C2_4:2FTS N	190 50	-150							
13C2_6:2FTS	113 50	-150							
13C2_8:2FTS	110 50	-150							
13C2_PFDoA	87 50	-150							
13C2_PFTeDA	74 50	-150							
13C3_PFBS	94 50	-150							
13C3_PFHxS	91 50	-150							
13C3-HFPO-DA	98 50	-150							

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L = LCS/LCSD failure
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S = MS/MSD failure

50-150

50-150

50-150

50-150

50-150

50-150

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13C4_PFBA

13C4_PFHpA

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

13C7_PFUdA

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60

99

94

87

102

91

Client: Tetra Tech

Description: FS1-DPT0003-045.0-20220215

Project Name: KSC-FS1

Date Sampled:02/15/2022 0925

Date Received: 02/16/2022

Project Number: 112G09581

Surrogate		acceptance Limits
13C8_PFOA	95	50-150
13C8_PFOS	95	50-150
13C9_PFNA	98	50-150
d-EtFOSA	77	50-150
d5-EtFOSAA	93	50-150
d3-MeFOSAA	97	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Laboratory ID: XB16023-020

Matrix: Aqueous

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

D = Dilution > 1

S = MS/MSD failure

Client: Tetra Tech Laboratory ID: XB16023-021

Description: FS1-EB-20220215-02

Date Sampled:02/15/2022 1000 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/09/2022 1702 JJG 03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Ru
-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3O	NS) 756426-58-1	PFAS by ID SOP	4.0	U	8.0	4.0	2.0	ng/L	1
1-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-P	F3) 763051-92-9	PFAS by ID SOP	4.0	U	8.0	4.0	2.0	ng/L	1
H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	4.0	U	8.0	4.0	2.0	ng/L	•
H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	4.0	U	8.0	4.0	2.0	ng/L	1
H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	4.0	U	8.0	4.0	2.0	ng/L	1
lexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	4.0	U	8.0	4.0	2.0	ng/L	1
,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	4.0	U	8.0	4.0	2.0	ng/L	1
I-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	4.0	U	8.0	4.0	2.0	ng/L	1
I-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	4.0	U	8.0	4.0	2.0	ng/L	1
J-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA	A) 2355-31-9	PFAS by ID SOP	4.0	U	8.0	4.0	2.0	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.0	U	4.0	2.0		ng/L	1
eniuoroocianesunonic aciu (FT OS)			2.0	U	4.0	2.0	1.0	TIG/L	
Surrogate Q %		otance mits							
3C2_4:2FTS	108 50	-150							
3C2_6:2FTS	113 50	-150							
3C2_8:2FTS	118 50	-150							
3C2_PFDoA	98 50	-150							
3C2_PFTeDA	87 50	-150							
3C3_PFBS	102 50	-150							
3C3_PFHxS	97 50	-150							
3C3-HFPO-DA	110 50	-150							
3C4_PFBA	104 50	-150							
3C4_PFHpA	104 50	-150							
3C5_PFHxA	98 50	-150							
3C5_PFPeA		-150							
3C6 PFDA									
3C7_PFUdA		-150							
_	9 8 50	1-150 1-150 of compound exceeded the	ne calibration r	ango F	DL = Detection Lir	nit	0	- Su	rrogat

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Q = Out of holding time

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W = Reported on wet weight basis

LOD = Limit of Detection

Client: Tetra Tech Laboratory ID: XB16023-021 Description: FS1-EB-20220215-02

Date Sampled:02/15/2022 1000 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581 Matrix: Aqueous

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	105	50-150
13C8_PFOS	100	50-150
13C9_PFNA	101	50-150
d-EtFOSA	90	50-150
d5-EtFOSAA	99	50-150
d3-MeFOSAA	102	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0004-005.0-20220215

Project Name: KSC-FS1

Laboratory ID: XB16023-022 Matrix: Aqueous

Date Sampled:02/15/2022 1035

Date Received: 02/16/2022

Project Number: 112G09581

Run Prep Method SOP SPE

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/09/2022 1713 JJG

Prep Date 03/08/2022 1247 34087

Batch

CAS Analytical LOD DL Parameter Number Result O LOO Units Run Method 756426-58-1 PFAS by ID SOP U 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS) 40 80 40 20 ng/L PFAS by ID SOP 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...) 763051-92-9 40 U 80 40 ng/L 1 20 PFAS by ID SOP U 1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS) 39108-34-4 40 80 40 ng/L 1 20 1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS) 27619-97-2 PFAS by ID SOP 40 U 80 ng/L 1 40 20 1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS) 757124-72-4 PFAS by ID SOP 40 U 80 ng/L 40 20 Hexafluoropropylene oxide dimer acid (GenX) 13252-13-6 PFAS by ID SOP 40 U 80 ng/L 1 40 20 4,8-dioxa-3H-perfluorononanoic acid (ADONA) 919005-14-4 PFAS by ID SOP 40 U 80 40 20 ng/L N-ethylperfluoro-1-octanesulfonamide (EtFOSA) 4151-50-2 PFAS by ID SOP 40 U 80 20 ng/L 1 40 N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA) 2991-50-6 PFAS by ID SOP 40 U 80 20 40 ng/L N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA) 2355-31-9 PFAS by ID SOP 40 U 80 20 ng/L 40 Perfluoro-1-butanesulfonic acid (PFBS) PFAS by ID SOP 20 375-73-5 40 20 10 ng/L Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-1-heptanesulfonic acid (PFHpS) 375-92-8 PFAS by ID SOP 20 U 40 10 ng/L 20 Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 20 40 U 20 10 ng/L Perfluorohexanesulfonic acid (PFHxS) 355-46-4 PFAS by ID SOP 17 - 1 40 20 ng/L 1 10 Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 20 40 20 10 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-dodecanoic acid (PFDoA) 307-55-1 PFAS by ID SOP 20 U 40 20 ng/L 1 10 Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 20 U 40 20 ng/L 1 10 Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 ng/L 10 Perfluoro-n-octanoic acid (PFOA) PFAS by ID SOP 335-67-1 20 U 40 20 ng/L 10 Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 20 U 40 ng/L 1 20 10 Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 20 U 40 20 ng/L 10 Perfluoro-n-tridecanoic acid (PFTrDA) PFAS by ID SOP 20 U 72629-94-8 40 20 10 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 ng/L 1 10 Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 28 40 20 ng/L 10 Run 1 Acceptance

Surrogate	Q	% Recovery	Limits
13C2_4:2FTS		124	50-150
13C2_6:2FTS		104	50-150
13C2_8:2FTS		110	50-150
13C2_PFDoA		93	50-150
13C2_PFTeDA		80	50-150
13C3_PFBS		105	50-150
13C3_PFHxS		98	50-150
13C3-HFPO-DA		109	50-150
13C4_PFBA		106	50-150
13C4_PFHpA		98	50-150
13C5_PFHxA		95	50-150
13C5_PFPeA		103	50-150
13C6_PFDA		104	50-150
13C7_PFUdA		95	50-150

LOQ = Limit of Quantitation V = Detected in the method blank E = Quantitation of compound exceeded the calibration range Q = Surrogate failure DL = Detection Limit U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and ≥ DL L = LCS/LCSD failure Q = Out of holding time W = Reported on wet weight basis S = MS/MSD failure LOD = Limit of Detection D = Dilution > 1

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0004-005.0-20220215

Date Sampled:02/15/2022 1035

Date Received: 02/16/2022

Laboratory ID: XB16023-022

Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	Acceptance Limits	
13C8_PFOA	92	50-150	
13C8_PFOS	101	50-150	
13C9_PFNA	102	50-150	
d-EtFOSA	83	50-150	
d5-EtFOSAA	96	50-150	
d3-MeFOSAA	101	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: XB16023-023

Description: FS1-DPT0004-012.0-20220215

Date Sampled:02/15/2022 1055 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/09/2022 1723 JJG 03/08/2022 1247 34087

9-chiloroheadecalturor-3-coxonone-1-sulforial caid (9C1FE) 150-150 1564-150-150-150-150-150-150-150-150-150-150	Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Rui
1H. 1H. 2H. 2H-perfluorodecame sulfonic acid (62 PTS) 39108-344 PFAS by ID SOP 40 U 80 40 20 mg/L 1H. 1H. 2H-perfluorodecame sulfonic acid (62 FTS) 5714-724 PFAS by ID SOP 40 U 80 40 20 mg/L 1H. 1H. 1H. 2H. 2H-perfluoroceanes sulfonic acid (62 FTS) 5714-724 PFAS by ID SOP 40 U 80 40 20 mg/L 1H. 1H. 1H. 2H. 2H-perfluoroceanes sulfonic acid (62 FTS) 5714-724 PFAS by ID SOP 40 U 80 40 20 mg/L 4B-adiovash-perfluorononomoric acid (ADONA) 91904-144 PFAS by ID SOP 40 U 80 40 20 mg/L N-ethylperfluoron-1-octanesulfonamide (EIFOSA) 4151-50.2 PFAS by ID SOP 40 U 80 40 20 mg/L N-ethylperfluoro-1-octanesulfonamide (EIFOSA) 4151-50.2 PFAS by ID SOP 40 U 80 40 20 mg/L N-ethylperfluoro-1-octanesulfonamide (EIFOSA) 375-35 PFAS by ID SOP 40 U 80 40 20 mg/L N-ethylperfluoro-1-octanesulfonamide (EIFOSA) 375-35 PFAS by ID SOP 40 U 80 40 20 mg/L N-ethylperfluoro-1-octanesulfonamide (EIFOSA) 375-35 PFAS by ID SOP 40 U 80 40 20 mg/L N-ethylperfluoro-1-octanesulfonadeceic acid (PFAS) 375-35 PFAS by ID SOP 40 U 80 40 20 mg/L N-ethylperfluoro-1-octanesulfonadeceic acid (PFAS) 375-35 PFAS by ID SOP 40 U 80 40 20 mg/L N-ethylperfluoro-1-octanesulfonadeceic acid (PFAS) 375-35 PFAS by ID SOP 40 U 40 20 10 mg/L N-ethylperfluoro-1-octanesulfonic acid (PFAS) 375-35 PFAS by ID SOP 40 U 40 20 10 mg/L N-ethylperfluoro-1-octanesulfonic acid (PFAS) 375-32 PFAS by ID SOP 40 U 40 20 10 mg/L N-ethylperfluoro-1-octanesulfonic acid (PFAS) 375-32 PFAS by ID SOP 40 U 40 20 10 mg/L N-ethylperfluoro-1-octanesulfonic acid (PFAS) 375-32 PFAS by ID SOP 40 U 40 20 U 40 20 ID mg/L N-ethylperfluoro-1-octanesulfonic acid (PFAS) 375-34 PFAS by ID SOP 40 U 40 20 U 40 20 ID mg/L N-ethylperfluoro-1-octanesulfonic acid (PFA) 375-35 PFAS by ID SOP 40 U 40 20 U 40 20 ID mg/L N-ethylperfluoro-1-octanesulfonic acid (PFA) 375-35 PFAS by ID SOP 40 U 40 20 U 40 20 ID mg/L N-ethylperfluoro-1-octanesulfonic acid (PFA) 375-35 PFAS by ID SOP 40 U 40	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS) 756426-58-1	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H. 1H. 2H. 2H-perfluoroocaane sulfonic acid (4.2 FTS)	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3.) 763051-92-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
HINTEL 24 Perfluoron-breame suffonic acid (42 FTS) 75712 + 724 PFAS by ID SOP	1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenN)	1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
4.8 dloxa 3H perfluoronanoic acid (ADONA) 4.9 19005-14-4 4.8 FAS by ID SOP 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylpperfluoro-1-octanesulfonamide (EIFOSA)	Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacelic acid (IEFOSAN)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfoniamidoacetic acid (MeFOSAA)	N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS) 375-73-5 PFAS by ID SOP 20 U 40 20 10 ng/L	N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-heplanesulfonic acid (PFHpS) 375-92-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-heplanesulfonic acid (PFNS) 84259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanesulfonic acid (PFNS) 855-64-8 PFAS by ID SOP 28 I 40 20 10 ng/L Perfluoro-1-pentanesulfonic acid (PFHxS) 875-24-9 PFAS by ID SOP 28 I 40 20 10 ng/L Perfluoro-1-pentanesulfonic acid (PFNS) 875-62-8 PFAS by ID SOP 28 I 40 20 10 ng/L Perfluoro-1-decanoic acid (PFDA) 875-72-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-decanoic acid (PFDA) 875-72-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFDA) 875-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFNA) 875-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFNA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFNA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFNA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFNA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFTPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFTPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFTPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFTPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFTPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFTPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFTPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFTPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFTPA) 875-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanoic acid (PFTPA) 875-95-1 PFAS by ID SOP 20 U 40 20 U 40	N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-manesulfonic acid (PFNS) 375-24-4 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-nebranesulfonic acid (PFNS) 375-24-4 PFAS by ID SOP 21 U 40 20 10 ng/L Perfluoro-nebranesulfonic acid (PFNA) 375-22-4 PFAS by ID SOP 21 U 40 20 10 ng/L Perfluoro-nebranoic acid (PFDA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-nebranoic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-nebranoic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-nebranoic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-nebranoic acid (PFNA) Perfluoro-nebranoic ac	Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-manesulfonic acid (PFNS) 375-24-4 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-nebranesulfonic acid (PFNS) 375-24-4 PFAS by ID SOP 21 U 40 20 10 ng/L Perfluoro-nebranesulfonic acid (PFNA) 375-22-4 PFAS by ID SOP 21 U 40 20 10 ng/L Perfluoro-nebranoic acid (PFDA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-nebranoic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-nebranoic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-nebranoic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-nebranoic acid (PFNA) Perfluoro-nebranoic ac	Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 28 I 40 20 10 ng/L Perfluoro-n-butanoic acid (PFDA) 375-22-4 PFAS by ID SOP 28 I 40 20 10 ng/L Perfluoro-n-butanoic acid (PFDA) 375-22-4 PFAS by ID SOP 28 I 40 20 10 ng/L Perfluoro-n-decanoic acid (PFDA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-decanoic acid (PFDA) 375-85-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-decanoic acid (PFDA) 375-85-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-hexanoic acid (PFDA) 375-85-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-noctanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-noctanoic acid (PFDA) 375-95-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-noctanoic acid (PFDA) 375-95-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L PERfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L PERfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L PERfluoro-n-tietradecanoic acid (PFDA) 375-95-1 PFAS by ID SOP	Perfluoro-1-heptanesulfonic acid (PFHpS)		PFAS by ID SOP	20	U	40		10	-	1
Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-thexanesulfonic acid (PFHxS) 355-46-4 PFAS by ID SOP 28 I 40 20 10 ng/L Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 11 I 40 20 10 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-hepathocia cid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-hepathocia cid (PFDA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-hepathocia cid (PFDA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-nonanoic acid (PFNA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-catanoic acid (PFNA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFDA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFDA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFDA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFDA) 376-67-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFTDA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFTDA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFTDA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFTDA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFTDA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFTDA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFTDA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFTDA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFTDA) 376-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tietadecanoic acid (PFTDA) 376-7 PFAS by ID SOP 20 U 40 20 10 ng/L PERfluoro-n-tietadecanoic acid (PFTDA) 376-7 PFAS by ID SOP 20 U 40 20		68259-12-1	•	20	U	40		10	-	1
Perfluoron-exanesulfonic acid (PFHxS) 355-46-4 PFAS by ID SOP 28 1 40 20 10 ng/L	· ·		•						-	1
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Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-dodecanoic acid (PFDA) 375-81-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-hepanoic acid (PFDA) 375-81-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-hexanoic acid (PFHA) 375-81-9 PFAS by ID SOP 13 I 40 20 10 ng/L Perfluoro-n-hexanoic acid (PFHA) 375-91-1 PFAS by ID SOP 13 I 40 20 10 ng/L Perfluoro-n-noanoic acid (PFNA) 375-91-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-noanoic acid (PFNA) 375-91-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFNA) 376-0-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFDA) 376-0-7 PFAS by ID SOP 15 I 40 20 10 ng/L Perfluoro-n-tertadecanoic acid (PFTeDA) 376-0-7 PFAS by ID SOP 15 I 40 20 10 ng/L Perfluoro-n-tertadecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tridecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tridecanoic acid (PFUAA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tridecanoic acid (PFUAA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tridecanoic acid (PFUAA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tridecanoic acid (PFUAA) 20 10 ng/L Perfluoro-n-tridecanoic acid (PFUAA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tridecanoic acid (PFUAA) 20 10 ng/L Perfluoro-n-tridecanoic acid (PFUAA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tridecanoic acid (PFUAA)	,		•						-	1
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Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 13 I 40 20 10 ng/L Perfluoro-n-noanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-noanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFPA) 2706-90-3 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tetradecanoic acid (PFPA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-ridecanoic acid (PFTDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFTDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFTDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-323-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-323-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-323-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-323-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-323-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-323-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-323-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-323-1 PFAS by ID SOP 20 U 40 20 U 40 20 10 ng/L Perfluoro-n-indecanoic acid (PFDA) 376-323-1 PFAS by ID SOP 20 U 40 20	,		•						-	1
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Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFOA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-pentanoic acid (PFPAA) 2706-90-3 PFAS by ID SOP 15 I 40 20 10 ng/L Perfluoro-n-tetradecanoic acid (PFPAA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tetradecanoic acid (PFTDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tetradecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoroctanesulfonic acid (PFOS) 1760-150 100 100 100 100 100 100 100 100 100	1 , 1 ,		,						-	1
Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/L	• • •		•						-	1
Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 15 I 40 20 10 ng/L Perfluoro-n-teltradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tridecanoic acid (PFTrDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L PERFLUOROCTANESULFONIC SULFINITS 114 50-150 150 150 150 150 150 150 150 150 150			•							1
Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-tridecanoic acid (PFTrDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoroctanesulfonic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoroctanesulfonic acid (PFOS) 376-32-31 PFAS by ID SOP 20 U 40 20 10 ng/L Surrogate Q % Recovery Limits 305-24:2FTS 314 50-150 313C2_4:2FTS 3174 50-150 313C2_PFDA 313C2_PFDA 313C2_PFDA 313C2_PFDA 313C2_PFDA 313C3_PFBS 3102 50-150 313C3_PFBS 3103_PFBS 3104_PFBA 3106_SO-150 313C4_PFBA 313C4_PFBA 313C4_PFBA 313C5_PFBA 313C5_PFPAA 313C5			•							1
Perfluoro-n-tridecanoic acid (PFTrDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoro-n-undecanoic acid (PFUdA) Perfluoro-n-undecanoic acid (PFUdA) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L 10 ng/L 10 10 10 10 10 10 10 10 10 1	·		-						_	1
Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L Run 1 Acceptance Surrogate Q % Recovery Limits 1302_4:2FTS 114 50-150 1302_8:2FTS 114 50-150 1302_8:2FTS 114 50-150 1302_PFDAA 1302_PFDAA 1303_PFBS 102 50-150 1303_PFBS 102 50-150 1303_PFHXS 97 50-150 1303_PFHXS 1303_PFBAA 106 50-150 1304_PFBA 1306_PFBA 107 50-150 1305_PFPAA 108 50-150 1305_PFPAA 109 50-150 1305_PFPAA 1306_PFPAA 1306_PFPA	·		•						-	1
Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L Run 1 Acceptance Surrogate 20 % Recovery Limits 1362_4:2FTS 1362_6:2FTS 107 50-150 1362_8:2FTS 1114 50-150 1362_PFDoA 1362_PFDoA 1362_PFDOA 1363_PFBS 102 50-150 1363_PFBS 102 50-150 1363_PFBS 1363_PFBS 102 50-150 1363_PFBA 1364_PFBA 1364_PFBA 1364_PFBA 1365_PFBA 1365_PFBA 1365_PFPAA 1365	·		•						-	1
Surrogate Q Run 1 Recovery Limits 13C2_4:2FTS 114 50-150 13C2_6:2FTS 107 50-150 13C2_8:2FTS 114 50-150 13C2_PFDOA 92 50-150 13C2_PFTeDA 83 50-150 13C3_PFBS 102 50-150 13C3_PFHxS 97 50-150 13C3_HFPO-DA 103 50-150 13C4_PFBA 106 50-150 13C4_PFHpA 99 50-150 13C5_PFHxA 97 50-150 13C5_PFPeA 105 50-150 13C6_PFDA 105 50-150	• •		•						-	
Surrogate Q % Recovery Limits 13C2_4:2FTS 114 50-150 13C2_6:2FTS 107 50-150 13C2_PFDoA 92 50-150 13C2_PFTeDA 83 50-150 13C3_PFBS 102 50-150 13C3_PFHxS 97 50-150 13C3_PFHxS 97 50-150 13C4_PFBA 106 50-150 13C4_PFHpA 99 50-150 13C5_PFHxA 97 50-150 13C5_PFPeA 105 50-150 13C6_PFDA 104 50-150	, ,			20	U	40	20	10	ng/L	1
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13C2_PFDoA 92 50-150 13C2_PFTeDA 83 50-150 13C3_PFBS 102 50-150 13C3_PFHxS 97 50-150 13C3_HFPO-DA 103 50-150 13C4_PFBA 106 50-150 13C4_PFHpA 99 50-150 13C5_PFHxA 97 50-150 13C5_PFPAA 105 50-150 13C5_PFPAA 105 50-150 13C5_PFPAA 105 50-150 13C6_PFDA 104 50-150	13C2_6:2FTS	107 50	-150							
13C2_PFTeDA 83 50-150 13C3_PFBS 102 50-150 13C3_PFHxS 97 50-150 13C3-HFPO-DA 103 50-150 13C4_PFBA 106 50-150 13C4_PFHpA 99 50-150 13C5_PFHxA 97 50-150 13C5_PFPAA 105 50-150 13C5_PFPAA 105 50-150 13C6_PFDA 104 50-150	13C2_8:2FTS	114 50	-150							
13C3_PFBS 102 50-150 13C3_PFHxS 97 50-150 13C3-HFPO-DA 103 50-150 13C4_PFBA 106 50-150 13C4_PFHpA 99 50-150 13C5_PFHxA 97 50-150 13C5_PFPeA 105 50-150 13C6_PFDA 104 50-150	13C2_PFDoA	92 50	-150							
13C3_PFHxS 97 50-150 13C3-HFPO-DA 103 50-150 13C4_PFBA 106 50-150 13C4_PFHpA 99 50-150 13C5_PFHxA 97 50-150 13C5_PFPeA 105 50-150 13C6_PFDA 104 50-150	13C2_PFTeDA	83 50	-150							
13C3-HFPO-DA 103 50-150 13C4_PFBA 106 50-150 13C4_PFHpA 99 50-150 13C5_PFHxA 97 50-150 13C5_PFPeA 105 50-150 13C6_PFDA 104 50-150	13C3_PFBS	102 50	-150							
13C4_PFBA 106 50-150 13C4_PFHpA 99 50-150 13C5_PFHxA 97 50-150 13C5_PFPeA 105 50-150 13C6_PFDA 104 50-150	13C3_PFHxS	97 50	-150							
13C4_PFHpA 99 50-150 13C5_PFHxA 97 50-150 13C5_PFPeA 105 50-150 13C6_PFDA 104 50-150		103 50	-150							
13C4_PFHpA 99 50-150 13C5_PFHxA 97 50-150 13C5_PFPeA 105 50-150 13C6_PFDA 104 50-150	13C4 PFBA	106 50	-150							
13C5_PFHxA 97 50-150 13C5_PFPeA 105 50-150 13C6_PFDA 104 50-150										
13C5_PFPeA 105 50-150 104 50-150										
13C6_PFDA 104 50-150										
70 00 100										
	1307_1 1 0uA	75 50	150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Q = Out of holding time

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

W = Reported on wet weight basis

LOD = Limit of Detection

D = Dilution > 1

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-DPT0004-012.0-20220215

Project Name: KSC-FS1

Date Sampled:02/15/2022 1055 Date Received: 02/16/2022 Project Number: 112G09581 Laboratory ID: XB16023-023

Matrix: Aqueous

Surrogate	Run 1 Acceptance Q % Recovery Limits	
13C8_PFOA	99 50-150	
13C8_PFOS	98 50-150	
13C9_PFNA	99 50-150	
d-EtFOSA	88 50-150	
d5-EtFOSAA	87 50-150	
d3-MeFOSAA	94 50-150	

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: XB16023-024

Description: FS1-FB-20220215-02

Date Sampled:02/15/2022 1110 Project Name: KSC-FS1
Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/09/2022 1756 JJG 03/08/2022 1247 34087

11-chtoreocoanluore-3-caudinacament-sufforia caid (11C-PF3) 76:051-92-9 PAS by ID SOP	Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
High High High High High High High High	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
Hi. H.H. 2H. 2H. Perflution claim (act of EFTS)	$\hbox{11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)}\\$	763051-92-9	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
His Hand Light Perform context and call (FERS) 757124-724 PFAS by ID SOP 4.1 U 8.2 4.1 2.0 ng/L 1 4.6-clitoxa 9H-performannic acid (ADONA) 19005-144 PFAS by ID SOP 4.1 U 8.2 4.1 2.0 ng/L 1 4.6-clitoxa 9H-performannic acid (ADONA) 19005-144 PFAS by ID SOP 4.1 U 8.2 4.1 2.0 ng/L 1 4.6-clitoxa 9H-performannic acid (FEOSA) 1915-150-2 PFAS by ID SOP 4.1 U 8.2 4.1 2.0 ng/L 1 4.6-clitoxa 9H-performannic acid (FEOSA) 1915-150-2 PFAS by ID SOP 4.1 U 8.2 4.1 2.0 ng/L 1 4.1 1.0 ng/L 1 4.1	1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
Hexathuoropropylene cake dimer acid (GenX)	1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
4.8 dlokas 3H perflutiononanolic acid (ADONA) 4.9 H900s-14.4 4.8 flokas 3H perflutiononanolic acid (EFOSA) 41 floy B2 4.1 4.1 20 ng/L 1 415 floy 19 SoP 4.1 415 floy 19 SoP 4	1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
Ne-dhyperfluoro-1-octanesulfonamide (EIFOSA)	Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
N-ethylipperflutoro1-octanesulfonamidoacetic acid (REFOSAA) 2991-50-6 PRAS by ID SOP 4.1 4.1 4.2 4.1 2.0 mg/L 11 PREflutoro1-butanesulfonic acid (PFDS) 235-73-5 PRAS by ID SOP 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
Namethyliperfluoro-1-octainesulfonia-midoscelia: acid (MeFOSA) 235-31-9 PFAS by ID SOP 4.1 U 8.2 4.1 2.0 ngl. 1 ngl. 1 ngl. 1 1 ngl. 1 1 1 ngl. 1 1 1 1 1 1 1 1 1	N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	4.1	U	8.2	4.1	2.0	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHS)	Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFNS)	Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-nonaneaulfonic acid (PFNS)	Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2.1	U	4.1		1.0	-	1
Perfluoro-1-pentane-sulfonic acid (PFNes) 2706-91-4 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 1.0 ng/L		68259-12-1	•	2.1	U				-	
Perfluoron-butanoic acid (PFEHxS)	• • •		•						-	
Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 1.0	•									
Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1	·		•							
Perfluoro-n-dodecanoic acid (PFDoA) 307-55-1 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 1	·		•							
Perfluoro-n-heptanolc acid (PFHpA) 375-85-9 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 1.0 1	·		•							
Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1	` ,		•							
Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 1 1 1 1 1 1 1 1			,							
Perfluoro-n-otanoic acid (PFOA) 335-67-1 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-tridecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-94-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2059-	,		•							
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Perfluoro-n-letradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1			•						-	
Perfluoro-n-tridecanoic acid (PFTrDA) 72629-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 1.0 ng/L 1 Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 1.0 ng	•		•						-	
Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Perfluoroctanesulfonic acid (PFOS) Run 1 763-23-1 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 1.0 ng/L 1 PACEPTANCE SURROGATE SURROGATE SURROGATE SURROGATE Recovery Acceptance Limits 1302_4:2FTS 122 50-150 1302_4:2FTS 121 50-150 1302_9:2TS 127 50-150 1302_PFDOA 101 50-150 1302_PFDOA 101 50-150 1303_PFBS 111 50-150 1303_PFHAS 106 50-150 1304_PFBA 110 50-150 1304_PFBA 110 50-150 1304_PFBA 110 50-150 1305_PFPAA 106 50-150 1305_PFPAA 107 50-150 1305_PFPAA 108 50-150 1305_PFPAA 109 50-150 1305_PFPAA 100 50-150 10	· · · · · · · · · · · · · · · · · · ·		•						-	
Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 2.1 U 4.1 2.1 1.0 ng/L 1 Run 1 Acceptance Limits 1362_4:2FTS 1362_4:2FTS 122 50-150 1362_8:2FTS 121 50-150 1362_9:PD0A 101 50-150 1362_PFD0A 101 50-150 1363_PFBS 111 50-150 1363_PFBS 111 50-150 1363_PFBS 111 50-150 1364_PFBA 106 50-150 1364_PFBA 110 50-150 1364_PFBA 110 50-150 1364_PFBA 110 50-150 1365_PFPAA 110 50-150 1365_PFPAA 110 50-150 1365_PFPAA 103 50-150 1365_PFPAA 104 50-150 1365_PFPAA 105 50-150 1365_PFPAA 106 50-150 1365_PFPAA 107 50-150 1365_PFPAA 108 50-150 1365_PFPAA 109 50-150 1365_PFPAA 100 50-150 1365_PFPAA 100 50-150 1365_PFPAA 100 50-150 1366_PFDA 1376_PFDA 1386_PFDA 148 50-150 159 50-150 150 50	· · · · · ·		•						-	
Surrogate Q % Recovery Limits 13C2_4:2FTS 122 50-150 13C2_B:2FTS 127 50-150 13C2_PFDOA 101 50-150 13C2_PFTeDA 89 50-150 13C3_PFBS 111 50-150 13C3_PFHxS 106 50-150 13C3_PFBA 110 50-150 13C4_PFBA 110 50-150 13C4_PFBA 106 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 103 50-150 13C5_PFPeA 101 50-150 13C6_PFPA 105 50-150 13C6_PFDA 114 50-150 13C7_PFUIDA 102 50-150 P = Countilitation of Compound exceeded the calibration range DL = Detection Limit DL = Surrogate failure DL = Lection Limit DL = Le	Perfluorooctanesulfonic acid (PFOS)		•						-	
13C2_4:2FTS 13C2_6:2FTS 121 50-150 13C2_8:2FTS 127 50-150 13C2_PFDoA 101 50-150 13C2_PFDOA 101 50-150 13C3_PFBS 111 50-150 13C3_PFBS 111 50-150 13C3_PFBS 111 50-150 13C3_PFBS 106 50-150 13C3_PFHxS 106 50-150 13C4_PFBA 110 50-150 13C4_PFBA 110 50-150 13C5_PFHxA 13C5_PFPAA 103 50-150 13C5_PFPAA 104 50-150 13C5_PFDA 13C6_PFDA 117 50-150 13C6_PFDA 118 50-150 13C6_PFDA 119 50-150 13C6_PFDA 110 50-150 13C6_PFDA 111 50-150 13C6_PFDA 112 50-150 13C6_PFDA 113 50-150 13C6_PFDA 114 50-150 13C6_PFDA 115 50-150 13C6_PFDA 116 50-150 15C6_PFDA 117 50-150 15C6_PFDA 118 50-150 15C6_PFDA 119 50-150 15C6_PFDA 110 50-150 15C6_PFDA 111 50-150 15C6_PFDA 112 50-150 15C6_PFDA 113 50-150 15C6_PFDA 114 50-150 15C6_PFDA 115 50-150 15C6_PFDA 116 50-150 15C6_PFDA 117 50-150 15C6_PFDA	Surrogate Ru	un 1 Accep covery Lir								
13C2_6:2FTS										
13C2_PFTeDA 101 50-150 13C2_PFTeDA 89 50-150 13C3_PFBS 111 50-150 13C3_PFHxS 106 50-150 13C3_HFPO-DA 113 50-150 13C4_PFBA 110 50-150 13C4_PFBA 106 50-150 13C5_PFHxA 107 50-150 13C5_PFHxA 108 50-150 13C5_PFPAA 109 50-150 13C5_PFPAA 100 50-150 13C5_PFDA 110 50-150 13C5_PFDA 110 50-150 13C6_PFDA 111 50-150 13C6_PFDA 112 50-150 13C6_PFDA 113 50-150 13C6_PFDA 114 50-150 13C6_PFDA 115 50-150 13C6_PFDA 116 50-150 127 50-150 128 50-150 129 50-150		121 50	-150							
13C2_PFTeDA		127 50	-150							
13C2_PFTeDA	-									
13C3_PFBS 111 50-150 13C3_PFHxS 106 50-150 13C3_HFPO-DA 113 50-150 13C4_PFBA 110 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 103 50-150 13C5_PFPeA 110 50-150 13C6_PFDA 13C6_PFDA 114 50-150 13C7_PFUdA V = Detected in the method blank = Quantitation of compound exceeded the calibration range DL = Detection Limit Q = Surrogate failure N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and ≥ DL L = LCS/LCSD failure LCS/LCSD										
13C3_PFHxS 106 50-150 13C4_PFBA 110 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 103 50-150 13C5_PFPeA 110 50-150 13C5_PFPeA 110 50-150 13C6_PFDA 114 50-150 13C7_PFUdA V = Detected in the method blank = Q = Surrogate failure = Not detected at or above the LOQ										
13C3-HFPO-DA 113 50-150 13C4_PFBA 110 50-150 13C5_PFHxA 103 50-150 13C5_PFPeA 110 50-150 13C6_PFPeA 110 50-150 13C7_PFUdA 104 50-150 105 50-150 107 FUdA 108 50-150 109 E Q = Limit of Quantitation										
13C4_PFBA 110 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 103 50-150 13C5_PFPeA 110 50-150 13C6_PFDA 114 50-150 13C7_PFUdA 102 50-150 DQ = Limit of Quantitation V = Detected in the method blank = Q = Surrogate failure = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40%										
13C4_PFHpA 106 50-150 13C5_PFHxA 103 50-150 13C5_PFPeA 110 50-150 13C6_PFDA 114 50-150 13C7_PFUdA 102 50-150 102 50-150 DQ = Limit of Quantitation = Not detected at or above the LOQ V = Detected in the method blank = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and ≥ DL L = LCS/LCSD failur										
13C5_PFHxA 103 50-150 13C5_PFPeA 110 50-150 13C6_PFDA 114 50-150 13C7_PFUdA 102 50-150 DQ = Limit of Quantitation V = Detected in the method blank = Quantitation of compound exceeded the calibration range = DL = Detection Limit										
13C5_PFPeA 110 50-150 13C6_PFDA 114 50-150 13C7_PFUdA 102 50-150 V = Detected in the method blank = Quantitation of compound exceeded the calibration range = Not detected at or above the LOQ = N = Recovery is out of criteria = P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and ≥ DL L = LCS/LCSD failures LoQ L = LCS/LCSD failures L = LCS/LCS	- '									
13C6_PFDA 114 50-150 13C7_PFUdA 102 50-150 DQ = Limit of Quantitation V = Detected in the method blank = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and ≥ DL L = LCS/LCSD failur										
13C7_PFUdA 102 50-150 DQ = Limit of Quantitation V = Detected in the method blank = Quantitation of compound exceeded the calibration range DL = Detection Limit Q = Surrogate failure P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and ≥ DL L = LCS/LCSD failure LOQ and ≥ DL L = LCS/LCSD failur										
OQ = Limit of Quantitation										
= Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and ≥ DL L = LCS/LCSD failures.	ISC/_FI UUA	102 50	- 15U							
•			•		ange				-	
	, and the second			ceeds 40%			t < LOQ and ≥ DL			

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-FB-20220215-02

Laboratory ID: XB16023-024 Matrix: Aqueous

Date Sampled:02/15/2022 1110 Date Received: 02/16/2022 Project Name: KSC-FS1
Project Number: 112G09581

13C8_PFOA 13C8_PFOS	107	50-150	
13C8 PFOS	101		
	104	50-150	
13C9_PFNA	109	50-150	
d-EtFOSA	92	50-150	
d5-EtFOSAA	107	50-150	
d3-MeFOSAA	108	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-025

Description: FS1-DPT0004-017.0-20220215

Date Sampled:02/15/2022 1115 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581 Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch SOP SPE PFAS by ID SOP QSM B-15 03/09/2022 1807 JJG 03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.5	U	7.0	3.5	1.8	ng/L	1
${\it 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic\ acid\ (11CI-PF3)}$	763051-92-9	PFAS by ID SOP	3.5	U	7.0	3.5	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.5	U	7.0	3.5	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	1	7.0	3.5	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.5	UQ	7.0	3.5	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.5	U	7.0	3.5	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.5	U	7.0	3.5	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.5	U	7.0	3.5	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.5	U	7.0	3.5	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.5	U	7.0	3.5	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.3	1	3.5	1.8	0.88	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.0	I	3.5	1.8	0.88	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	24		3.5	1.8	0.88	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	10		3.5	1.8	0.88	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	6.4		3.5	1.8	0.88	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	6.6		3.5	1.8	0.88	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	20		3.5	1.8	0.88	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	7.2		3.5	1.8	0.88	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.88	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.2	1	3.5	1.8	0.88	ng/L	1
Surrogate Ru Q % Rec		otance mits							
13C2_4:2FTS N 2	205 50	-150							
13C2_6:2FTS	105 50	-150							
13C2_8:2FTS	116 50	-150							
13C2_PFDoA	91 50	-150							
13C2_PFTeDA	77 50	-150							
13C3_PFBS	88 50	-150							
13C3_PFHxS	91 50	-150							
13C3-HFPO-DA	96 50	-150							
13C4_PFBA	54 50	-150							
13C4_PFHpA	100 50	-150							
13C5_PFHxA	90 50	-150							

LOQ = Limit of Quantitation V = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit Q = Surrogate failure U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and \geq DL L = LCS/LCSD failure LOD = Limit of Detection D = Dilution > 1 S = MS/MSD failure W = Reported on wet weight basis Q = Out of holding time

50-150

50-150

50-150

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13C5_PFPeA

13C6_PFDA

13C7_PFUdA

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81

102

88

Client: Tetra Tech

Description: FS1-DPT0004-017.0-20220215

Project Name: KSC-FS1

Date Sampled:02/15/2022 1115 Project

Laboratory ID: XB16023-025 Matrix: Aqueous

Date Received: 02/16/2022

Project Number: 112G09581

Surrogate	Run 1 Ao Q % Recovery	Acceptance Limits
13C8_PFOA	90	50-150
13C8_PFOS	91	50-150
13C9_PFNA	95	50-150
d-EtFOSA	73	50-150
d5-EtFOSAA	98	50-150
d3-MeFOSAA	95	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1 Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-026

Description: FS1-DPT0004-025.0-20220215

Date Sampled:02/15/2022 1140 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581

Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/09/2022 1818 JJG	03/08/2022 1247 34087

PFAS by ID SOP	3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 4.8 1.8	U U U U U U U U U U U U	7.2 7.2 7.2 7.2 7.2 7.2 7.2 7.2 7.2	3.6 3.6 3.6 3.6 3.6 3.6 3.6	1.8 1.8 1.8 1.8 1.8 1.8 1.8	ng/L ng/L ng/L ng/L ng/L ng/L	1 1 1 1
PFAS by ID SOP	3.6 3.6 3.6 3.6 3.6 3.6 3.6 4.8	U U UQ U U U U	7.2 7.2 7.2 7.2 7.2 7.2 7.2	3.6 3.6 3.6 3.6 3.6 3.6	1.8 1.8 1.8 1.8 1.8	ng/L ng/L ng/L ng/L ng/L	1 1
PFAS by ID SOP	3.6 3.6 3.6 3.6 3.6 3.6 6.8	U UQ U U U	7.2 7.2 7.2 7.2 7.2 7.2	3.6 3.6 3.6 3.6 3.6	1.8 1.8 1.8 1.8	ng/L ng/L ng/L ng/L	1
PFAS by ID SOP	3.6 3.6 3.6 3.6 3.6 6.8	UQ U U U	7.2 7.2 7.2 7.2 7.2	3.6 3.6 3.6 3.6	1.8 1.8 1.8	ng/L ng/L ng/L	
PFAS by ID SOP	3.6 3.6 3.6 3.6 3.6 6.8	U U U U	7.2 7.2 7.2 7.2	3.6 3.6 3.6	1.8 1.8	ng/L ng/L	1
PFAS by ID SOP	3.6 3.6 3.6 3.6 6.8 1.8	U U U	7.2 7.2 7.2	3.6 3.6	1.8	ng/L	
PFAS by ID SOP	3.6 3.6 3.6 6.8 1.8	U U	7.2 7.2	3.6		-	1
PFAS by ID SOP PFAS by ID SOP	3.6 3.6 6.8 1.8	U	7.2		1.8		1
PFAS by ID SOP PFAS by ID SOP	3.6 6.8 1.8			2.4		ng/L	1
PFAS by ID SOP PFAS by ID SOP	6.8 1.8	U	7.0	3.6	1.8	ng/L	1
PFAS by ID SOP PFAS by ID SOP PFAS by ID SOP PFAS by ID SOP PFAS by ID SOP	1.8		7.2	3.6	1.8	ng/L	1
PFAS by ID SOP PFAS by ID SOP PFAS by ID SOP PFAS by ID SOP			3.6	1.8	0.90	ng/L	1
PFAS by ID SOP PFAS by ID SOP PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
PFAS by ID SOP PFAS by ID SOP PFAS by ID SOP		U	3.6	1.8	0.90	ng/L	1
PFAS by ID SOP PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
PFAS by ID SOP	6.1		3.6	1.8	0.90	ng/L	1
•	34		3.6	1.8	0.90	ng/L	1
PFAS by ID SOP	6.4		3.6	1.8	0.90	ng/L	1
PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
PFAS by ID SOP	5.8	O	3.6	1.8		ng/L	1
PFAS by ID SOP	11		3.6		0.90	-	
PFAS by ID SOP				1.8	0.90	ng/L	1
PFAS by ID SOP	1.8 5.1	U	3.6 3.6	1.8	0.90	ng/L	1 1
PFAS by ID SOP	10		3.6	1.8	0.90	ng/L	1
•		U		1.8	0.90	ng/L	
PFAS by ID SOP	1.8		3.6	1.8	0.90	ng/L	1
PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
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)	0-150 0-150 0-150 0-150 of compound exceeded th	0-150 0-150 0-150 0-150 of compound exceeded the calibration ra	0-150 0-150 0-150 0-150 0-150 of compound exceeded the calibration range DL	0-150 0-150 0-150 0-150 0-150 of compound exceeded the calibration range DL = Detection Lin	0-150 0-150 0-150 0-150 0-150 of compound exceeded the calibration range DL = Detection Limit	0-150 0-150 0-150 0-150 0-150 of compound exceeded the calibration range DL = Detection Limit Q	0-150 0-150 0-150 0-150 0-150 of compound exceeded the calibration range DL = Detection Limit Q = Surrogate

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Q = Out of holding time

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W = Reported on wet weight basis

LOD = Limit of Detection

D = Dilution > 1

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-DPT0004-025.0-20220215

Date Sampled:02/15/2022 1140

Date Received: 02/16/2022

Project Name: KSC-FS1

Laboratory ID: XB16023-026 Matrix: Aqueous

Project Number: 112G09581

Surrogate	Run 1 Acceptance Q % Recovery Limits	
13C8_PFOA	93 50-150	
13C8_PFOS	94 50-150	
13C9_PFNA	96 50-150	
d-EtFOSA	66 50-150	
d5-EtFOSAA	92 50-150	
d3-MeFOSAA	96 50-150	

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: XB16023-027 Matrix: Aqueous

Description: FS1-DPT0004-035.0-20220215

Project Name: KSC-FS1

Date Sampled:02/15/2022 1205 Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method SOP SPE

13C4_PFHpA

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/09/2022 1829 JJG

Prep Date 03/08/2022 1247 34087

Batch

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	7.4		3.7	1.9	0.92	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	6.1		3.7	1.9	0.92	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	34		3.7	1.9	0.92	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	7.5		3.7	1.9	0.92	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	6.5		3.7	1.9	0.92	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	12		3.7	1.9	0.92	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	6.4		3.7	1.9	0.92	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	11		3.7	1.9	0.92	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	UQ	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
		otance nits							
13C2_4:2FTS N 2	215 50	-150							
_		-150							
_	113 50	-150							
13C2_PFDoA	79 50	-150							
13C2_PFTeDA N	45 50	-150							
13C3_PFBS	92 50	-150							
13C3_PFHxS	92 50	-150							
13C3-HFPO-DA	93 50	-150							
13C4_PFBA	58 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

96

91

83

104

85

LOD = Limit of Detection

50-150

50-150

50-150

50-150

50-150

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Date Received: 02/16/2022

Description: FS1-DPT0004-035.0-20220215

Date Sampled:02/15/2022 1205

Project Name: KSC-FS1

Laboratory ID: XB16023-027 Matrix: Aqueous

Project Number: 112G09581

Surrogate	Q	Run 1 A % Recovery	Acceptance Limits			
13C8_PFOA		91	50-150			
13C8_PFOS		95	50-150			
13C9_PFNA		99	50-150			
d-EtFOSA	Ν	48	50-150			
d5-EtFOSAA		88	50-150			
d3-MeFOSAA		94	50-150			

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-028

Description: FS1-DPT0004-045.0-20220215

Date Sampled:02/15/2022 1230 Project Name: KSC-FS1
Date Received: 02/16/2022 Project Number: 112G09581

Project Number: 112G09581

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/09/2022 1840 JJG 03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.8	UQ	7.5	3.8	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	2.7	1	3.7	1.9	0.93	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	0.99	1	3.7	1.9	0.93	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.3	I	3.7	1.9	0.93	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Surrogate Ru		otance mits							
		-150							
13C2_6:2FTS	109 50	-150							
13C2_8:2FTS	109 50	-150							
13C2_PFDoA	78 50	-150							
13C2_PFTeDA	61 50	-150							
13C3_PFBS	82 50	-150							
	85 50	-150							
13C3-HFPO-DA	88 50	-150							
13C4_PFBA	51 50	-150							
13C4_PFHpA	88 50	-150							
13C5_PFHxA	87 50	-150							
	80 50	-150							

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L = LCS/LCSD failure
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S = MS/MSD failure

50-150

50-150

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13C6_PFDA

13C7_PFUdA

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96

81

Client: Tetra Tech

Description: FS1-DPT0004-045.0-20220215

Date Sampled:02/15/2022 1230 Date Received: 02/16/2022 Laboratory ID: XB16023-028 Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	87	50-150
13C8_PFOS	87	50-150
13C9_PFNA	89	50-150
d-EtFOSA	65	50-150
d5-EtFOSAA	85	50-150
d3-MeFOSAA	90	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

03/09/2022 1913 JJG

Client: Tetra Tech Laboratory ID: XB16023-029

Description: FS1-DPT0005-005.0-20220215

Run Prep Method

SOP SPE

Date Sampled:02/15/2022 1335 Project Name: KSC-FS1
Date Received: 02/16/2022 Project Number: 112G09581

PFAS by ID SOP QSM B-15

Analytical Method Dilution Analysis Date Analyst Prep Date Batch

03/08/2022 1247 34087

Matrix: Aqueous

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	40	U	80	40	20	ng/L	1
$\hbox{11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)}\\$	763051-92-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	10	ı	40	20	10	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	20	U	40	20		ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	20	U	40	20	10 10	ng/L	1
Surrogate Ri Surrogate Q % Rei		otance mits							
13C2_4:2FTS	129 50	-150							
13C2_6:2FTS	114 50	-150							
13C2_8:2FTS	126 50	-150							
13C2_PFDoA	102 50)-150							
13C2_PFTeDA	94 50	-150							
13C3_PFBS	114 50	-150							
		-150							
		-150							
)-150							
)-150							
_ ')-150							
)-150							
)-150							
)-150							
OQ = Limit of Quantitation V = Detected in the method blank	E = Quantitation	of compound exceeded th	e calibration r	ange	DL = Detection Lin	nit	Q	= Surroga	te failur
= Not detected at or above the LOQ N = Recovery is out of criteria = Out of holding time W = Reported on wet weight basis	P = The RPD bet LOD = Limit of De	ween two GC columns ex	ceeds 40%		I = Estimated resu D = Dilution > 1	lt < LOQ and ≥ DL		= LCS/LCS = MS/MSE	

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0005-005.0-20220215

Date Sampled:02/15/2022 1335 Date Received: 02/16/2022 Project Name: KSC-FS1
Project Number: 112G09581

Laboratory ID: XB16023-029

Matrix: Aqueous

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	107	50-150
13C8_PFOS	107	50-150
13C9_PFNA	110	50-150
d-EtFOSA	94	50-150
d5-EtFOSAA	109	50-150
d3-MeFOSAA	111	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Laboratory ID: XB16023-030 Client: Tetra Tech

Description: FS1-DPT0005-012.0-20220215

Date Sampled:02/15/2022 1355 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581 Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Ba	atch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/09/2022 1924 JJG	03/08/2022 1247 34	087

11-thlorociocanduro-1-aufonic acid (11CFPF3.) 763051-92-9 PFAS by ID SOP 40 U 80 40 20 ng/1	Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units	Run
11-11-12-12-12-12-12-12-12-12-12-12-12-1	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	40 U	80	40	20	ng/L	1
H. H. J. H. J. Pit-perfluencectane sulforic acid (4 CP FTS) 27619-97.2 PFAS by ID SOP 40 U 80 40 20 ng/ H. H. H. J. Pit-Pit-Pot (4 CP FTS) 10 SOP 40 U 80 40 20 ng/ H. H. Pit-Pit-Pit-Pot (4 CP FTS) 10 SOP 40 U 80 40 20 ng/ H. Pit-Pit-Pit-Pot (4 CP FTS) 10 SOP 40 U 80 40 20 ng/ H. Pit-Pit-Pit-Pit-Pot (4 CP FTS) 10 SOP 40 U 80 40 20 ng/ H. Pit-Pit-Pit-Pit-Pit-Pit-Pit-Pit-Pit-Pit-	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	40 U	80	40	20	ng/L	1
H-HI-LD-H-Perflucroneanse sulfinalization (42 FTS) 757124 794 PFAS by ID SOP 40 U 80 40 20 ng/4 4.8-dioxa-31-H-producronannic acid (ADONA) 719005-144 PFAS by ID SOP 40 U 80 40 20 ng/4 4.8-dioxa-31-H-producronannic acid (ADONA) 719005-144 PFAS by ID SOP 40 U 80 40 20 ng/4 4.8-dioxa-31-H-producronannic acid (ADONA) 719005-144 PFAS by ID SOP 40 U 80 40 20 ng/4 4.8-dioxa-31-H-producronannic acid (ADONA) 719005-144 PFAS by ID SOP 40 U 80 40 20 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonamidoaccid acid (EFOSA) 2355-319 PFAS by ID SOP 40 U 80 40 20 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonamidoaccid acid (EFOSA) 2355-319 PFAS by ID SOP 40 U 80 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonamidoaccid acid (MeFOSA) 2355-319 PFAS by ID SOP 20 U 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonamidoaccid acid (MeFOSA) 2375-73-8 PFAS by ID SOP 20 U 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonamidoaccid acid (MeFOSA) 2375-73-8 PFAS by ID SOP 20 U 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonal acid (MeFOSA) 2375-73-8 PFAS by ID SOP 20 U 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonal acid (MeFOSA) 2355-319 PFAS by ID SOP 20 U 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonal acid (MeFOSA) 2355-319 PFAS by ID SOP 20 U 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonal acid (MeFOSA) 2355-319 PFAS by ID SOP 20 U 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonal acid (MeFOSA) 2375-8 PFAS by ID SOP 20 U 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonal acid (MeFOSA) 2375-8 PFAS by ID SOP 20 U 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-octanesulfonal acid (MeFOSA) 2375-8 PFAS by ID SOP 20 U 40 20 10 ng/4 4.8-dioxa-31-H-producron-1-o	1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	40 U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	40 U	80	40	20	ng/L	1
4.8 dloxa 3H perfluorononanoic acid (ADONA) 919005-144 PFAS by ID SOP 40 U 80 40 20 ng/ Nethyleperfluoro-1-octanesulfonamidae(EFOSA) 4151-50-2 PFAS by ID SOP 40 U 80 40 20 ng/ Nethyleperfluoro-1-octanesulfonamidaeselic acid (EFOSAA) 2355-31-9 PFAS by ID SOP 40 U 80 40 20 ng/ Nembyleperfluoro-1-octanesulfonamidaeselic acid (EFOSAA) 2355-31-9 PFAS by ID SOP 40 U 80 40 20 ng/ Perfluoro-1-broanesulfonic acid (PFDS) 375-73-5 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-broanesulfonic acid (PFDS) 375-73-5 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-broanesulfonic acid (PFDS) 375-73-5 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-broanesulfonic acid (PFDS) 375-73-5 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-broanesulfonic acid (PFDS) 375-73-5 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-perfluoro-1-broanesulfonic acid (PFDS) 375-73-5 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-perfluoro-1-perfluoro-1-perfluoro-1-perfluoro-1-perfluoro-1-perfluoro-1-perfluoro-1-perfluoro-1-doceanesulfonic acid (PFDS) 375-73-5 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-doceanesulfonic acid (PFDA) 335-74-PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-doceanesulfonic acid (PFDA) 335-75-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-doceanesulfonic acid (PFDA) 307-55-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-doceanesulfonic acid (PFDA) 335-75-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-perfluoro-1-doceanecic acid (PFDA) 335-75-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-pe	1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	40 U	80	40	20	ng/L	1
Nethylperfluoro 1-octanesulfonamide (EFOSA)	Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	40 U	80	40	20	ng/L	1
Nethylperfluoro-1-octanesulfonamidoacetic acid (NeFOSA) 2991-80-6 PFAS by ID SOP 40 U 80 40 20 ng/ Nethylperfluoro-1-octanesulfonic acid (NeFOSA) 2355-31-9 PFAS by ID SOP 40 U 80 40 20 10 ng/ Perfluoro-1-octanesulfonic acid (PFBS) 375-73-5 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanesulfonic acid (PFDS) 375-73-73 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanesulfonic acid (PFDS) 375-73-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-pentanesulfonic acid (PFNS) 6625-91-21 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-pentanesulfonic acid (PFNS) 355-40-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-pentanesulfonic acid (PFNS) 355-40-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecial acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-octanecia	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	40 U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFoSAA)	N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	40 U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS) 375-73-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-1-decanesulfonic acid (PFDS) 9 Perfluoro-1-decanesulfonic acid (PFBS) 335-77-3 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-1 Perfluoro-1-nonanesulfonic acid (PFBS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-1 Perfluoro-1-nonanesulfonic acid (PFPAS) 375-22-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-1 Perfluoro-1-perfluoro-	N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	40 U	80	40	20	ng/L	1
Perfluoro-1-declanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-1-heptanesulfonic acid (PFHSS) 375-92-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-1-heptanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-1-pentanesulfonic acid (PFNS) 375-84-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-1-pentanesulfonic acid (PFDA) 375-24-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-24-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanoic acid (PFDA) 375-35-1 PFAS by ID SOP 30 PFAS by ID SOP 30 U 40 20 U 40 20	N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	40 U	80	40	20	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS) 375-92-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-nonanesulfonic acid (PFPES) 2706-91-14 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-butanoic acid (PFNS) 355-46-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-butanoic acid (PFNAS) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-dodecanoic acid (PFDA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-dodecanoic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-heptanoic acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-heptanoic acid (PFNA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-heptanoic acid (PFNA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-hexanoic acid (PFNA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-hexanoic acid (PFNA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-ctanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-perlanoic acid (PFNA) 376-90-3 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-tetradecanoic acid (PFDA) 376-90-3 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-tridecanoic acid (PFTDA) 376-90-3 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-tridecanoic acid (PFTDA) 376-90-3 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-tridecanoic acid (PFTDA) 376-90-3 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-tridecanoic acid (PFTDA) 376-90-3 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-tridecanoic acid (PFTDA) 376-90-91 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-tridecanoic acid (PFTDA) 376-90-91 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-tridecanoic acid (PFTDA) 376-90-91 PFAS by ID SOP 20 U 40	Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	20 U	40	20	10	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS) 375-92-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-1-nonanesulfonic acid (PFPES) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-butanoic acid (PFHxS) 355-46-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-decanoic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-heptanoic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-hexanoic acid (PFNA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-nonanoic acid (PFNA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-nonanoic acid (PFNA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-neparlanoic acid (PFNA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-eleradecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-eleradecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-eleradecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-eleradecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-eleradecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-eleradecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-eleradecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/ PERfluoro-n-eleradecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/ PERfluoro-n-eleradecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 U 40 20 U 40 2	Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	20 U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	20 U	40		10	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-nexanesulfonic acid (PFHAS) 355-46-4 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-nethanolic acid (PFBA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-nedecanolic acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-nethecanolic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-nethecanolic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-nethecanolic acid (PFHA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-nethecanolic acid (PFHA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-nethecanolic acid (PFHA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-nethecanolic acid (PFNA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-nethecanolic acid (PFPA) 376-66-7 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-neterialecanolic acid (PFPA) 376-66-7 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-neterialecanolic acid (PFTDA) 72629-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-neterialecanolic acid (PFTDA) 72629-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-neterialecanolic acid (PFDA) 72629-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-neterialecanolic acid (PFDA) 72629-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-neterialecanolic acid (PFDA) 72629-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-neterialecanolic acid (PFDA) 72629-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-neterialecanolic acid (PFDA) 72629-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-neterialecanolic acid (PFDA) 72629-948 PFAS by ID SOP 20 U 40 20 U 40 20 U 10 ng/Perfluoro-neterialecanolic acid (PFDA) 72629-948 PFAS by ID SOP 20 U 40 20 U 40 20 U 10 Ng/Perfluoro-neterial	Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	20 U	40		10	ng/L	1
Perfluoro-n-butanolc acid (PFBA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanolc acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanolc acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanolc acid (PFHA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanolc acid (PFHA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanolc acid (PFHA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-nanolc acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-perflanolc acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-perflanolc acid (PFPA) 376-95-3 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-perflanolc acid (PFTA) 376-90-3 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolc acid (PFTA) 376-90-3 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolc acid (PFTA) 2762-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolc acid (PFTA) 2762-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolc acid (PFTA) 2762-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolc acid (PFTA) 2762-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolc acid (PFUA) 2762-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolc acid (PFUA) 2762-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolc acid (PFUA) 2762-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolc acid (PFUA) 2762-948 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolc acid (PFUA) 2762-948 PFAS by ID SOP 20 U 40 20 U 20 U 40 20 U	Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	20 U	40		10	ng/L	1
Perfluoro-n-butanolic acid (PFDA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanolic acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-decanolic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanolic acid (PFHA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanolic acid (PFHA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanolic acid (PFHA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-nocianolic acid (PFNA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-perfluoric acid (PFOA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-perfluoric acid (PFDA) 376-90-3 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolic acid (PFTeDA) 376-90-3 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolic acid (PFTeDA) 376-90-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolic acid (PFTeDA) 376-90-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-tridecanolic acid (PFTeDA) 20 20 U 40 20 10 ng/Perfluoro-n-tridecanolic acid (PFTeDA) 20 20 U 40 20 10 ng/Perfluoro-n-tridecanolic acid (PFUA) 20 20 U 40 20 10 ng/Perfluoro-n-tridecanolic acid (PFUA) 20 20 U 40 20 20 U 20 20 U 20 20	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	20 U	40	20	10	ng/L	1
Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-dedecanoic acid (PFDA) 307-55-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanoic acid (PFHA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanoic acid (PFHA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanoic acid (PFHA) 375-85-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-denoic acid (PFOA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-hetradecanoic acid (PFPA) 376-66-7 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-hetradecanoic acid (PFTeDA) 376-66-7 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-hetradecanoic acid (PFTeDA) 376-66-7 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-hetradecanoic acid (PFTeDA) 376-66-7 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-hetradecanoic acid (PFTeDA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-undecanoic acid (PFUA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 U 40 20 U 40 20 U 40 U 40	Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	20 U	40	20	10	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA) 307-55-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-hexanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-octanoic acid (PFDA) 376-96-71 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFDA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFDA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/Perfluoro-n-teridecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 U 2	Perfluoro-n-decanoic acid (PFDA)	335-76-2	•	20 U	40			ng/L	1
Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-branancic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-catanoic acid (PFOA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-terridaceanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-terridaceanoic acid (PFTDA) 726-29-94-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-terridaceanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-terridaceanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-	Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	•	20 U				ng/L	1
Perfluoro-n-hexanoic acid (PFNA) 307-24-4 PFAS by ID SOP 20 U 40 20 10 ng/	·		,	20 U	40			ng/L	1
Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20			,					ng/L	1
Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-terradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-terradecanoic acid (PFTeDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-terradecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-terradecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-terradecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoro-n-terradecanoic acid (PFUdA) 20 No 50 50 50 50 50 50 50 50 <t< td=""><td>• • •</td><td></td><td>,</td><td></td><td></td><td></td><td></td><td></td><td>1</td></t<>	• • •		,						1
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Perfluoron-Irridecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluoron-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/ Perfluorocatanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/ Surrogate Run 1 Acceptance Acceptance V U 40 20 10 ng/ Surrogate Run 1 Acceptance V Limits V V 40 20 10 ng/ Surrogate Run 1 Acceptance V Limits V V 40 20 10 ng/ Surrogate Run 1 Acceptance V Limits V V 40 20 10 ng/ 30C2_6:FTS 115 50-150 50-150 13C2_PTA 13C2_PTA 13C2_PTA 13C2_PTA 13C2_PTA 13C2_PTA	•		•	20 U				ng/L	1
Perfluoron-undecanoic acid (PFUdA) Perfluoron-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 10 10 1763-23-1 PFAS by ID SOP 20 U 40 20 10 10 10 10 10 10 10 10 10 10 10 10 10			,					ng/L	1
Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/ Run 1 Acceptance Surrogate Q % Recovery Limits 130 50-150 1302_4:2FTS 130 50-150 1302_8:2FTS 115 50-150 1302_9:2FTS 1102 50-150 1302_PFDOA 102 50-150 1303_PFBS 114 50-150 1303_PFBS 114 50-150 1303_PFBS 103 50-150 1303_PFBA 103 50-150 1303_PFBA 104 50-150 1304_PFBA 107 50-150 1304_PFBA 108 50-150 1305_PFHXA 109 50-150 1305_PFPAA 110 50-150 1305_PFPAA 111 50-150 1305_PFPAA 112 50-150 1305_PFPAA 113 50-150 1305_PFPAA 114 50-150 1305_PFPAA 115 50-150 1305_PFPAA 116 50-150 1305_PFPAA 117 50-150 1305_PFPAA 118 50-150 1305_PFPAA 119 50-150 1305_PFPAA 110 50-150 1305_PFPAA 110 50-150 1305_PFPAA 111 50-150 1305_PFPAA 112 50-150 1305_PFPAA 113 50-150 1305_PFPAA 114 50-150 1305_PFPAA 115 50-150 1305_PFPAA 116 50-150			,					ng/L	1
Surrogate Q % Recovery Limits 13C2_4:2FTS 130 50-150 13C2_6:2FTS 115 50-150 13C2_PFD0A 102 50-150 13C2_PFTeDA 73 50-150 13C3_PFBS 114 50-150 13C3_PFHxS 103 50-150 13C3_PFDA 115 50-150 13C4_PFBA 107 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 102 50-150 13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150	·		•					ng/L	1
13C2_4:2FTS 130 50-150 13C2_6:2FTS 115 50-150 13C2_8:2FTS 124 50-150 13C2_PFDOA 102 50-150 13C2_PFTeDA 73 50-150 13C3_PFBS 114 50-150 13C3_PFHxS 103 50-150 13C3_HFPO-DA 115 50-150 13C4_PFBA 107 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 102 50-150 13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150	- Ru	ın 1 Accep							
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13C2_8:2FTS 124 50-150 13C2_PFDOA 102 50-150 13C2_PFTeDA 73 50-150 13C3_PFBS 114 50-150 13C3_PFHxS 103 50-150 13C3-HFPO-DA 115 50-150 13C4_PFBA 107 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 102 50-150 13C6_PFDA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150									
13C2_PFDoA 102 50-150 13C2_PFTeDA 73 50-150 13C3_PFBS 114 50-150 13C3_PFHxS 103 50-150 13C3-HFPO-DA 115 50-150 13C4_PFBA 107 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 102 50-150 13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150									
13C2_PFTeDA 73 50-150 13C3_PFBS 114 50-150 13C3_PFHxS 103 50-150 13C3-HFPO-DA 115 50-150 13C4_PFBA 107 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 102 50-150 13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150	_								
13C3_PFBS 114 50-150 13C3_PFHxS 103 50-150 13C3-HFPO-DA 115 50-150 13C4_PFBA 107 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 102 50-150 13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150									
13C3_PFHxS 103 50-150 13C3_HFPO-DA 115 50-150 13C4_PFBA 107 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 102 50-150 13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150									
13C3-HFPO-DA 115 50-150 13C4_PFBA 107 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 102 50-150 13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150									
13C4_PFBA 107 50-150 13C4_PFHpA 106 50-150 13C5_PFHxA 102 50-150 13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150									
13C4_PFHpA 106 50-150 13C5_PFHxA 102 50-150 13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150									
13C5_PFHxA 102 50-150 13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150									
13C5_PFPeA 114 50-150 13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150									
13C6_PFDA 115 50-150 13C7_PFUdA 99 50-150	-								
13C7_PFUdA 99 50-150									
OO - Limit of Quantitation V - Detected in the method blank F - Quantitation of compound exceeded the calibration range DL - Detection Limit O - Surrou	13C7_PFUdA	99 50	-150						
U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and ≥ DL L = LCS/L	OQ = Limit of Quantitation		•					= Surrogat	

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0005-012.0-20220215

Date Sampled:02/15/2022 1355 Date Received: 02/16/2022

Project Name: KSC-FS1

Project Number: 112G09581

Laboratory ID: XB16023-030

Matrix: Aqueous

Surrogate		ceptance Limits		
13C8_PFOA	103	50-150		
13C8_PFOS	106	50-150		
13C9_PFNA	109	50-150		
d-EtFOSA	80	50-150		
d5-EtFOSAA	96	50-150		
d3-MeFOSAA	99	50-150		

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0005-017.0-20220215

Date Sampled:02/15/2022 1415 Project Name: KSC-FS1 Laboratory ID: XB16023-031 Matrix: Aqueous

Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch SOP SPE PFAS by ID SOP QSM B-15 03/09/2022 1935 JJG 03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	40	U	80	40	20	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Surrogate Q % Re		otance mits							
13C2_4:2FTS		-150							
13C2_6:2FTS	109 50	-150							
13C2_8:2FTS		-150							
13C2_PFDoA	93 50	-150							
13C2_PFTeDA	77 50	-150							
13C3_PFBS	102 50	-150							
13C3_PFHxS	94 50	-150							
13C3-HFPO-DA	106 50	-150							
13C4_PFBA	103 50	-150							
13C4_PFHpA	97 50	-150							
13C5_PFHxA	102 50	-150							

LOQ = Limit of Quantitation V = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit Q = Surrogate failure U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and \geq DL L = LCS/LCSD failure LOD = Limit of Detection D = Dilution > 1 S = MS/MSD failure W = Reported on wet weight basis Q = Out of holding time

50-150

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFPeA 13C6_PFDA

13C7_PFUdA

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

105

106

91

Client: Tetra Tech

Description: FS1-DPT0005-017.0-20220215

Date Sampled:02/15/2022 1415 Project Name: KSC-FS1

Laboratory ID: XB16023-031 Matrix: Aqueous

Date Received: 02/16/2022

Project Number: 112G09581

Surrogate		Acceptance Limits
13C8_PFOA	100	50-150
13C8_PFOS	93	50-150
13C9_PFNA	101	50-150
d-EtFOSA	78	50-150
d5-EtFOSAA	90	50-150
d3-MeFOSAA	93	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-032

Description: FS1-DPT0005-025.0-20220215

Date Sampled:02/15/2022 1435 Project Name: KSC-FS1
Date Received: 02/16/2022 Project Number: 112G09581

od Dilution Analysis Date Analyst Pren Date Batch

Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/09/2022 1946 JJG	03/08/2022 1247	34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	1	3.6	1.8	0.90	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.2	1	3.6	1.8	0.90	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	12		3.6	1.8	0.90	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	11	Q	3.6	1.8	0.90	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	10		3.6	1.8	0.90	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	21		3.6	1.8	0.90	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	5.9		3.6	1.8	0.90	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	32		3.6	1.8	0.90	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Ru Surrogate Q % Rec		otance nits							
		-150							
_		-150							
		-150							
		-150							
		-150							
		-150							
		-150							
		-150							
		-150							
		-150 -150							
•		-150							
		-150							
		- 150 -150							
I3CU_FI DA	102 50	-150							

U = Not detected at or above the LOQ $\,$ N = Recovery is out of criteria $\,$ P = The RPD between two GC columns exceeds 40% $\,$ I = Estimated result < LOQ and $\,$ D = LOZ/LCSD failure $\,$ Q = Out of holding time $\,$ W = Reported on wet weight basis $\,$ LOD = Limit of Detection $\,$ D = Dilution > 1 $\,$ S = MS/MSD failure

E = Quantitation of compound exceeded the calibration range

DL = Detection Limit

Q = Surrogate failure

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C7_PFUdA

LOQ = Limit of Quantitation

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V = Detected in the method blank

95

Client: Tetra Tech

Description: FS1-DPT0005-025.0-20220215

Date Sampled:02/15/2022 1435

Date Received: 02/16/2022

Project Name: KSC-FS1
Project Number: 112G09581

Laboratory ID: XB16023-032

Matrix: Aqueous

Surrogate	Run 1 Acceptance Q % Recovery Limits
13C8_PFOA	91 50-150
13C8_PFOS	95 50-150
13C9_PFNA	96 50-150
d-EtFOSA	63 50-150
d5-EtFOSAA	99 50-150
d3-MeFOSAA	97 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

 $\label{thm:pace-analytical} \mbox{Pace Analytical Services, LLC} \ \ \mbox{(formerly Shealy Environmental Services, Inc.)}$

Client: Tetra Tech Laboratory ID: XB16023-033

Description: FS1-DPT0005-035.0-20220215

Date Sampled:02/15/2022 1500 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581

Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/09/2022 1957 JJG	03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.5	UQ	7.0	3.5	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
		•	1.0	J	0.0	1.0	0.67	ng/ L	•
Surrogate Q % Rec		otance mits							
13C2_4:2FTS N	198 50	-150							
13C2_6:2FTS	116 50	-150							
13C2_8:2FTS	112 50	-150							
13C2_PFDoA	85 50	-150							
13C2_PFTeDA	67 50	-150							
13C3_PFBS	91 50	-150							
13C3_PFHxS	93 50	-150							
13C3-HFPO-DA	95 50	-150							
13C4_PFBA	59 50	-150							
13C4_PFHpA	96 50	-150							
·	96 50	-150							
		-150							
		-150							
		-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-DPT0005-035.0-20220215

Date Sampled:02/15/2022 1500 Date Received: 02/16/2022 Laboratory ID: XB16023-033

Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	94	50-150
13C8_PFOS	96	50-150
13C9_PFNA	98	50-150
d-EtFOSA	67	50-150
d5-EtFOSAA	93	50-150
d3-MeFOSAA	95	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-034

Description: FS1-DPT0005-045.0-20220215

Date Sampled:02/15/2022 1530 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G0958

Project Number: 112G09581

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/09/2022 2008 JJG 03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.4	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
		otance nits							
-		-150							
_		-150							
13C2_8:2FTS	110 50	-150							
13C2_PFDoA	83 50	-150							
13C2_PFTeDA	68 50	-150							
13C3_PFBS	92 50	-150							
13C3_PFHxS	93 50	-150							
13C3-HFPO-DA	94 50	-150							
		-150							
13C4_PFHpA	97 50	-150							

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L = LCS/LCSD failure
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S = MS/MSD failure

50-150

50-150

50-150

50-150

 $\label{thm:pace-analytical} \mbox{Pace Analytical Services, LLC} \ \ \mbox{(formerly Shealy Environmental Services, Inc.)}$

13C5_PFHxA 13C5_PFPeA

13C6_PFDA

13C7_PFUdA

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94

87

102

90

Client: Tetra Tech

Description: FS1-DPT0005-045.0-20220215

Date Sampled:02/15/2022 1530

Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581 Laboratory ID: XB16023-034

Matrix: Aqueous

Surrogate	Run 1 Acceptance Q % Recovery Limits	
13C8_PFOA	90 50-150	
13C8_PFOS	97 50-150	
13C9_PFNA	96 50-150	
d-EtFOSA	69 50-150	
d5-EtFOSAA	92 50-150	
d3-MeFOSAA	98 50-150	

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: XB16023-035

Description: FS1-EB-20220215-03

Date Sampled:02/15/2022 1540 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/09/2022 2019 JJG 03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Ru	ın 1 Accep	otance							
		mits							
_		-150							
-		-150							
-		-150							
-		-150							
		-150							
		-150							
-		-150							
		-150							
_	4_PFBA 109 50-150								
_ ,									
	3C5_PFPeA 109 50-150								
		-150							
13C7_PFUdA	104 50	-150							
LOQ = Limit of Quantitation V = Detected in the method blank	E = Quantitation	of compound exceeded to	he calibration ra	nge	DL = Detection Limit		Q	= Surrogat	e failure
U = Not detected at or above the LOQ N = Recovery is out of criteria		ween two GC columns e	xceeds 40%		I = Estimated result	< LOQ and ≥ DL		= LCS/LCS	
Q = Out of holding time W = Reported on wet weight basis	LOD = Limit of De	etection			D = Dilution > 1		S	= MS/MSD	failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Labora

Description: FS1-EB-20220215-03 Date Sampled:02/15/2022 1540

Date Received: 02/16/2022

Project Name: KSC-FS1
Project Number: 112G09581

Laboratory ID: XB16023-035 Matrix: Aqueous

Run 1 Acceptance Surrogate Q % Recovery Limits 13C8_PFOA 50-150 13C8_PFOS 106 50-150 13C9_PFNA 107 50-150 d-EtFOSA 93 50-150 d5-EtFOSAA 108 50-150 d3-MeFOSAA 112 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

 $E = Quantitation \ of compound \ exceeded \ the \ calibration \ range$ $P = The \ RPD \ between \ two \ GC \ columns \ exceeds \ 40\%$ $LOD = Limit \ of \ Detection$

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB16023-036

Description: FS1-FD-20220215-01

Date Sampled:02/15/2022 Project Name: KSC-FS1 Date Received: 02/16/2022 Project Number: 112G09581 Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/09/2022 2029 JJG	03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.4	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.3	1	3.7	1.9	0.92	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	3.3	1	3.7	1.9	0.92	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	15		3.7	1.9	0.92	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	0.99	1	3.7	1.9	0.92	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.2	1	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	4.8		3.7	1.9	0.92	ng/L	1
Surrogate Q % Re	covery Lir	otance nits							
_		-150							
-		-150							
_		-150							
13C2_PFDoA		-150							
13C2_PFTeDA		-150							
13C3_PFBS		-150							
13C3_PFHxS	93 50	-150							
		-150							
		-150							
		-150							
13C5_PFHxA		-150							
		-150							
	102 50	-150							
13C7_PFUdA	87 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-FD-20220215-01

Date Sampled:02/15/2022
Date Received:02/16/2022

Laboratory ID: XB16023-036

Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	Acceptance Limits	
13C8_PFOA	93	50-150	
13C8_PFOS	96	50-150	
13C9_PFNA	94	50-150	
d-EtFOSA	64	50-150	
d5-EtFOSAA	95	50-150	
d3-MeFOSAA	97	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ \underline{>} \ DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

03/09/2022 2040 JJG

Analytical

Client: Tetra Tech Laboratory ID: XB16023-037

CAS

Description: FS1-FD-20220215-02

Run Prep Method

SOP SPE

Perfluorooctanesulfonic acid (PFOS)

Date Sampled:02/15/2022 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

PFAS by ID SOP QSM B-15

Analytical Method Dilution Analysis Date Analyst Prep Date Batch

03/08/2022 1247 34087

20 U

Matrix: Aqueous

20

ng/L

Parameter	Number	Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	40	U	80	40	20	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	28	I	40	20	10	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	10	I	40	20	10	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	11	1	40	20	10	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	13	1	40	20	10	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1

Surrogate Q	Run 1 A % Recovery	cceptance Limits
13C2_4:2FTS	120	50-150
13C2_6:2FTS	111	50-150
13C2_8:2FTS	117	50-150
13C2_PFDoA	93	50-150
13C2_PFTeDA	79	50-150
13C3_PFBS	109	50-150
13C3_PFHxS	104	50-150
13C3-HFPO-DA	110	50-150
13C4_PFBA	110	50-150
13C4_PFHpA	105	50-150
13C5_PFHxA	102	50-150
13C5_PFPeA	112	50-150
13C6_PFDA	110	50-150
13C7_PFUdA	95	50-150

1763-23-1 PFAS by ID SOP

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \ge DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-FD-20220215-02

Matrix:

Date Sampled:02/15/2022 Project Name: KSC-FS1
Date Received: 02/16/2022 Project Number: 112G09581

Laboratory ID: XB16023-037 Matrix: Aqueous

Surrogate	Run 1 Ao Q % Recovery	eptance Limits	
13C8_PFOA	103	50-150	
13C8_PFOS	103	50-150	
13C9_PFNA	104	50-150	
d-EtFOSA	77	50-150	
d5-EtFOSAA	82	50-150	
d3-MeFOSAA	90	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1 Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: XB16023-038

Description: FS1-FD-20220215-03

Date Sampled:02/15/2022 Project Name: KSC-FS1

Date Received: 02/16/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/09/2022 2051 JJG 03/08/2022 1247 34087

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Ru
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	UQ	7.1	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.1	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.89	ng/L	1
R Surrogate Q % Re		otance nits							
13C2_4:2FTS N		-150							
13C2_6:2FTS		-150							
13C2_8:2FTS	113 50	-150							
- 13C2_PFDoA		-150							
- 13C2_PFTeDA	70 50	-150							
13C3_PFBS		-150							
13C3_PFHxS		-150							
13C3-HFPO-DA		-150							
13C4_PFBA		-150							
13C4_PFHpA		-150							
13C5_PFHxA		-150							
13C5_PFPeA		-150							
13C6_PFDA		-150							
13C7_PFUdA		-150							
1307_11 OUA	74 30	150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Q = Out of holding time

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

W = Reported on wet weight basis

LOD = Limit of Detection

D = Dilution > 1

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-FD-20220215-03

Date Sampled:02/15/2022 Project Name: KSC-FS1
Date Received: 02/16/2022 Project Number: 112G09581

Laboratory ID: XB16023-038

Matrix: Aqueous

Surrogate	Run 1 A Q % Recovery	cceptance Limits			
13C8_PFOA	95	50-150			
13C8_PFOS	100	50-150			
13C9_PFNA	101	50-150			
d-EtFOSA	75	50-150			
d5-EtFOSAA	95	50-150			
d3-MeFOSAA	100	50-150			

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

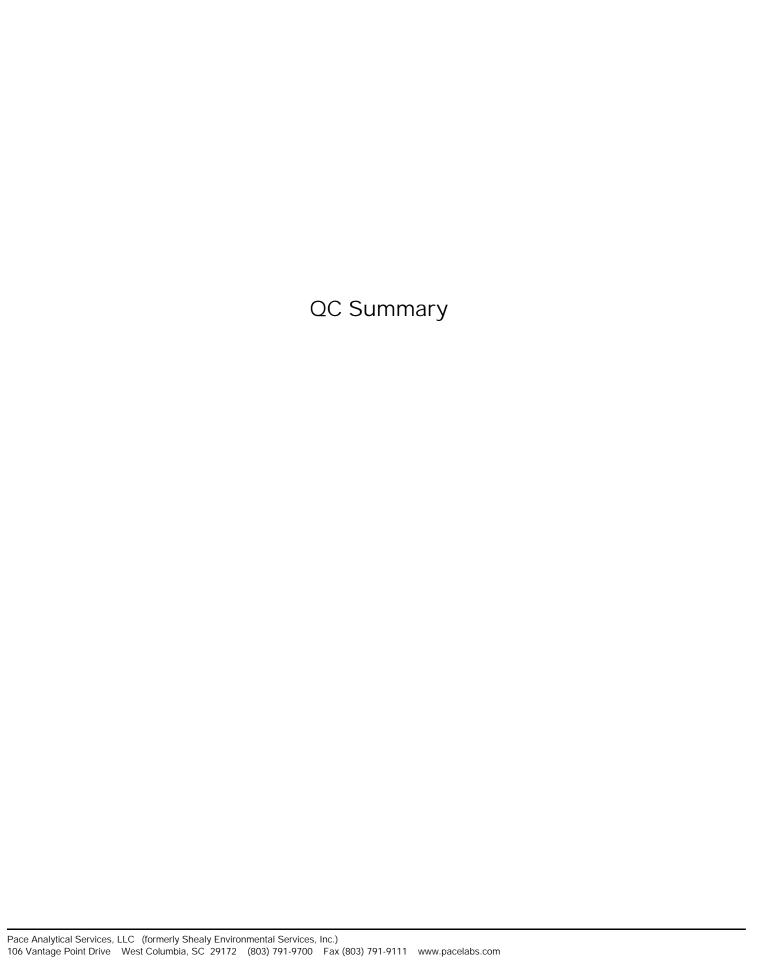
V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)



PFAS by LC/MS/MS - MB

Sample ID: XQ33989-001 Batch: 33989

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/07/2022 1618

9CI-PF3ONS	Analysis Date
8:2 FTS 4.0 U 1 8.0 4.0 2.0 ng/L 6:2 FTS 4.0 U 1 8.0 4.0 2.0 ng/L 4:2 FTS 4.0 U 1 8.0 4.0 2.0 ng/L GenX 4.0 U 1 8.0 4.0 2.0 ng/L ADONA 4.0 U 1 8.0 4.0 2.0 ng/L EIFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L MeFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L PFBS 2.0 U 1 4.0 2.0 1.0 ng/L PFDS 2.0 U 1 4.0 2.0 1.0 ng/L PFPBS 2.0 U 1 4.0 2.0 1.0 ng/L PFDS 2.0 U 1 4.0 2.0 1.0 ng/L PFPS 2.0 U 1 4.0 2.0 1.0 ng/L	03/08/2022 1221
6.2 FTS	03/08/2022 1221
4:2 FTS	03/08/2022 1221
GenX 4.0 U 1 8.0 4.0 2.0 ng/L ADONA 4.0 U 1 8.0 4.0 2.0 ng/L EIFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L MeFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L PFBS 2.0 U 1 4.0 2.0 1.0 ng/L PFBS 2.0 U 1 4.0 2.0 1.0 ng/L PFBS 2.0 U 1 4.0 2.0 1.0 ng/L PFHpS 2.0 U 1 4.0 2.0 1.0 ng/L PFNS 2.0 U 1 4.0 2.0 1.0 ng/L PFPS 2.0 U 1 4.0 2.0 1.0 ng/L PFBA 2.0 U 1 4.0 2.0 1.0 ng/L	03/08/2022 1221
ADONA	03/08/2022 1221
EIFOSA 4.0 U 1 8.0 4.0 2.0 ng/L EIFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L MeFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L PFBS 2.0 U 1 4.0 2.0 1.0 ng/L PFDS 2.0 U 1 4.0 2.0 1.0 ng/L PFNS 2.0 U 1 4.0 2.0 1.0 ng/L	03/08/2022 1221
EIFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L MeFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L PFBS 2.0 U 1 4.0 2.0 1.0 ng/L PFDS 2.0 U 1 4.0 2.0 1.0 ng/L PFNS 2.0 U 1 4.0 2.0 1.0 ng/L PFNS 2.0 U 1 4.0 2.0 1.0 ng/L PFPS 2.0 U 1 4.0 2.0 1.0 ng/L PFPS 2.0 U 1 4.0 2.0 1.0 ng/L PFBA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L	03/08/2022 1221
MeFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L PFBS 2.0 U 1 4.0 2.0 1.0 ng/L PFDS 2.0 U 1 4.0 2.0 1.0 ng/L PFHpS 2.0 U 1 4.0 2.0 1.0 ng/L PFNS 2.0 U 1 4.0 2.0 1.0 ng/L PFPeS 2.0 U 1 4.0 2.0 1.0 ng/L PFPeS 2.0 U 1 4.0 2.0 1.0 ng/L PFPAS 2.0 U 1 4.0 2.0 1.0 ng/L PFPAS 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L	03/08/2022 1221
PFBS 2.0	03/08/2022 1221
PFDS 2.0 U 1 4.0 2.0 1.0 ng/L PFHpS 2.0 U 1 4.0 2.0 1.0 ng/L PFNS 2.0 U 1 4.0 2.0 1.0 ng/L PFPeS 2.0 U 1 4.0 2.0 1.0 ng/L PFHXS 2.0 U 1 4.0 2.0 1.0 ng/L PFHXS 2.0 U 1 4.0 2.0 1.0 ng/L PFBA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFHAA 2.0 U 1 4.0 2.0 1.0 ng/L PFNA 2.0 U 1 4.0 2.0 1.0 ng/L	03/08/2022 1221
PFHpS 2.0 U 1 4.0 2.0 1.0 ng/L PFNS 2.0 U 1 4.0 2.0 1.0 ng/L PFPS 2.0 U 1 4.0 2.0 1.0 ng/L PFHXS 2.0 U 1 4.0 2.0 1.0 ng/L PFBA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFHXA 2.0 U 1 4.0 2.0 1.0 ng/L PFNA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L <t< td=""><td>03/08/2022 1221</td></t<>	03/08/2022 1221
PFNS 2.0 U 1 4.0 2.0 1.0 ng/L PFPeS 2.0 U 1 4.0 2.0 1.0 ng/L PFHXS 2.0 U 1 4.0 2.0 1.0 ng/L PFHXS 2.0 U 1 4.0 2.0 1.0 ng/L PFBA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFHA 2.0 U 1 4.0 2.0 1.0 ng/L PFNA 2.0 U 1 4.0 2.0 1.0 ng/L PFNA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L <t< td=""><td>03/08/2022 1221</td></t<>	03/08/2022 1221
PFPeS 2.0	03/08/2022 1221
PFHXS 2.0 U 1 4.0 2.0 1.0 ng/L PFBA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFHXA 2.0 U 1 4.0 2.0 1.0 ng/L PFNA 2.0 U 1 4.0 2.0 1.0 ng/L PFOA 2.0 U 1 4.0 2.0 1.0 ng/L PFPA 2.0 U 1 4.0 2.0 1.0 ng/L PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUDA 2.0 U 1 4.0 2.0 1.0 ng/L <	03/08/2022 1221
PFBA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFDOA 2.0 U 1 4.0 2.0 1.0 ng/L PFHPA 2.0 U 1 4.0 2.0 1.0 ng/L PFHXA 2.0 U 1 4.0 2.0 1.0 ng/L PFNA 2.0 U 1 4.0 2.0 1.0 ng/L PFOA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFTEDA 2.0 U 1 4.0 2.0 1.0 ng/L PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUGA 2.0 U 1 4.0 2.0 1.0 ng/L	03/08/2022 1221
PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFDOA 2.0 U 1 4.0 2.0 1.0 ng/L PFHpA 2.0 U 1 4.0 2.0 1.0 ng/L PFHXA 2.0 U 1 4.0 2.0 1.0 ng/L PFNA 2.0 U 1 4.0 2.0 1.0 ng/L PFOA 2.0 U 1 4.0 2.0 1.0 ng/L PFOA 2.0 U 1 4.0 2.0 1.0 ng/L PFDA 2.0 U 1 4.0 2.0 1.0 ng/L PFTEDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUGA 2.0 U 1 4.0 2.0 1.0 ng/L PFOS 2.0 V 1 4.0 2.0 1.0 ng/L	03/08/2022 1221
PFDOA 2.0 U 1 4.0 2.0 1.0 ng/L PFHpA 2.0 U 1 4.0 2.0 1.0 ng/L PFHxA 2.0 U 1 4.0 2.0 1.0 ng/L PFNA 2.0 U 1 4.0 2.0 1.0 ng/L PFOA 2.0 U 1 4.0 2.0 1.0 ng/L PFPA 2.0 U 1 4.0 2.0 1.0 ng/L PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 13C2_4:2FTS 105 50-150 50-150 1.0 1.0 1.0 1.0 <td>03/08/2022 1221</td>	03/08/2022 1221
PFHpA 2.0 U 1 4.0 2.0 1.0 ng/L PFHxA 2.0 U 1 4.0 2.0 1.0 ng/L PFNA 2.0 U 1 4.0 2.0 1.0 ng/L PFOA 2.0 U 1 4.0 2.0 1.0 ng/L PFPA 2.0 U 1 4.0 2.0 1.0 ng/L PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L PFOS 2.0 U 1 4.0 2.0 1.0 ng/L Surrogate 0 % Rec Acceptance Limit 1.0 1.0 ng/L 13C2_8:2FTS 103 50-150 50-150 1.0 1.0 1.0 1.0 <td>03/08/2022 1221</td>	03/08/2022 1221
PFHXA 2.0 U 1 4.0 2.0 1.0 ng/L PFNA 2.0 U 1 4.0 2.0 1.0 ng/L PFOA 2.0 U 1 4.0 2.0 1.0 ng/L PFPeA 2.0 U 1 4.0 2.0 1.0 ng/L PFTeDA 2.0 U 1 4.0 2.0 1.0 ng/L PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L PFOS 2.0 U 1 4.0 2.0 1.0 ng/L Surrogate 0 Rec Acceptance 1.0 1.0 ng/L 13C2_4:2FTS 103 50-150 50-150 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	03/08/2022 1221
PFNA 2.0 U 1 4.0 2.0 1.0 ng/L PFOA 2.0 U 1 4.0 2.0 1.0 ng/L PFPeA 2.0 U 1 4.0 2.0 1.0 ng/L PFTeDA 2.0 U 1 4.0 2.0 1.0 ng/L PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L PFOS 2.0 U 1 4.0 2.0 1.0 ng/L Surrogate 0 % Rec Acceptance Limit 1.0 ng/L 1.0 ng/L 13C2_4:2FTS 103 50-150 50-150 1.0	03/08/2022 1221
PFOA 2.0 U 1 4.0 2.0 1.0 ng/L PFPeA 2.0 U 1 4.0 2.0 1.0 ng/L PFTeDA 2.0 U 1 4.0 2.0 1.0 ng/L PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L PFOS 2.0 U 1 4.0 2.0 1.0 ng/L Surrogate 0 % Rec Acceptance Limit 1.0 ng/L 13C2_4:2FTS 103 50-150 50-150 13C2_8:2FTS 128 50-150 13C2_PFDOA 96 50-150 13C2_PFTeDA 95 50-150	03/08/2022 1221
PFPeA 2.0 U 1 4.0 2.0 1.0 ng/L PFTeDA 2.0 U 1 4.0 2.0 1.0 ng/L PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L PFOS 2.0 U 1 4.0 2.0 1.0 ng/L Surrogate Q % Rec Acceptance Limit Limit 1.0 ng/L 13C2_4:2FTS 103 50-150 50-150 50-150 13C2_8:2FTS 128 50-150 50-150 50-150 50-150 13C2_PFTeDA 95 50-150 50-1	03/08/2022 1221
PFTeDA 2.0 U 1 4.0 2.0 1.0 ng/L PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L PFOS 2.0 U 1 4.0 2.0 1.0 ng/L Surrogate Q Rec Acceptance Limit V	03/08/2022 1221
PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L PFOS 2.0 U 1 4.0 2.0 1.0 ng/L Surrogate Q % Rec Acceptance Limit 1.0 1.0 ng/L 13C2_4:2FTS 105 50-150 50-150 13C2_8:2FTS 128 50-150 50-150 13C2_PFDOA 96 50-150 50-150 13C2_PFTeDA 95 50-150	03/08/2022 1221
PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L PFOS 2.0 U 1 4.0 2.0 1.0 ng/L Surrogate Q % Rec Acceptance Limit 1.0 1.0 ng/L 13C2_4:2FTS 105 50-150 50-150 13C2_8:2FTS 128 50-150 13C2_PFDoA 96 50-150 13C2_PFTeDA 95 50-150	03/08/2022 1221
PFOS 2.0 U 1 4.0 2.0 1.0 ng/L Surrogate Q % Rec Acceptance Limit Company of Limit </td <td>03/08/2022 1221</td>	03/08/2022 1221
Surrogate Q % Rec Acceptance Limit 13C2_4:2FTS 105 50-150 13C2_6:2FTS 103 50-150 13C2_8:2FTS 128 50-150 13C2_PFDoA 96 50-150 13C2_PFTeDA 95 50-150	03/08/2022 1221
Surrogate Q % Rec Limit 13C2_4:2FTS 105 50-150 13C2_6:2FTS 103 50-150 13C2_8:2FTS 128 50-150 13C2_PFDoA 96 50-150 13C2_PFTeDA 95 50-150	03/08/2022 1221
13C2_4:2FTS 105 50-150 13C2_6:2FTS 103 50-150 13C2_8:2FTS 128 50-150 13C2_PFDoA 96 50-150 13C2_PFTeDA 95 50-150	
13C2_6:2FTS 103 50-150 13C2_8:2FTS 128 50-150 13C2_PFDoA 96 50-150 13C2_PFTeDA 95 50-150	
13C2_8:2FTS 128 50-150 13C2_PFDoA 96 50-150 13C2_PFTeDA 95 50-150	
13C2_PFDoA 96 50-150 13C2_PFTeDA 95 50-150	
13C2_PFTeDA 95 50-150	
1000 PERC 00 F0.4F0	
13C3_PFBS 99 50-150	
13C3_PFHxS 99 50-150	
13C3-HFPO-DA 108 50-150	
13C4_PFBA 101 50-150	
13C4_PFHpA 92 50-150	
13C5_PFHxA 93 50-150	
13C5_PFPeA 95 50-150	

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - MB

Sample ID: XQ33989-001 Batch: 33989

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/07/2022 1618

Surrogate	Q % Rec	Acceptance Limit		
13C6_PFDA	100	50-150		
13C7_PFUdA	103	50-150		
13C8_PFOA	96	50-150		
13C8_PFOS	98	50-150		
13C9_PFNA	103	50-150		
d-EtFOSA	85	50-150		
d5-EtFOSAA	104	50-150		
d3-MeFOSAA	104	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: XQ33989-002 Batch: 33989

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 03/07/2022 1618

Spike Amount Result %Rec Analysis Date Parameter Q % Rec Limit (ng/L) (ng/L) Dil 9CI-PF3ONS 15 15 1 100 70-150 03/08/2022 1232 11CI-PF3OUdS 97 15 15 1 70-150 03/08/2022 1232 8:2 FTS 15 14 1 93 67-138 03/08/2022 1232 15 1 104 6:2 FTS 16 64-140 03/08/2022 1232 4:2 FTS 15 14 1 94 63-143 03/08/2022 1232 GenX 32 27 1 84 70-150 03/08/2022 1232 **ADONA** 15 16 104 70-150 03/08/2022 1232 03/08/2022 1232 **EtFOSA** 99 16 70-150 16 1 **EtFOSAA** 16 15 96 61-135 03/08/2022 1232 MeFOSAA 16 91 65-136 03/08/2022 1232 14 **PFBS** 72-130 03/08/2022 1232 14 15 106 **PFDS** 15 107 53-142 03/08/2022 1232 16 03/08/2022 1232 PFHpS 15 16 1 107 69-134 **PFNS** 15 15 1 100 69-127 03/08/2022 1232 **PFPeS** 15 15 102 71-127 03/08/2022 1232 **PFHxS** 15 93 68-131 03/08/2022 1232 14 PFBA 03/08/2022 1232 16 16 102 73-129 **PFDA** 103 03/08/2022 1232 16 16 1 71-129 **PFDoA** 16 18 1 114 72-134 03/08/2022 1232 **PFHpA** 16 18 111 72-130 03/08/2022 1232 **PFHxA** 16 16 99 72-129 03/08/2022 1232 PFNA 16 18 110 69-130 03/08/2022 1232 **PFOA** 17 106 71-133 03/08/2022 1232 16 **PFPeA** 101 72-129 03/08/2022 1232 16 16 **PFTeDA** 16 17 107 71-132 03/08/2022 1232 99 **PFTrDA** 16 16 1 65-144 03/08/2022 1232 **PFUdA** 16 16 1 103 69-133 03/08/2022 1232 **PFOS** 15 16 105 65-140 03/08/2022 1232 Acceptance Surrogate Q % Rec Limit 105 50-150 13C2_4:2FTS 50-150 13C2 6:2FTS 100 13C2_8:2FTS 109 50-150 13C2_PFDoA 97 50-150 13C2_PFTeDA 91 50-150 13C3_PFBS 91 50-150 97 13C3_PFHxS 50-150 13C3-HFPO-DA 102 50-150 13C4_PFBA 93 50-150 13C4_PFHpA 90 50-150 13C5_PFHxA 89 50-150 13C5_PFPeA 94 50-150

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - LCS

Sample ID: XQ33989-002 Batch: 33989

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/07/2022 1618

Surrogate	Q % Rec	Acceptance Limit	
13C6_PFDA	95	50-150	
13C7_PFUdA	97	50-150	
13C8_PFOA	94	50-150	
13C8_PFOS	92	50-150	
13C9_PFNA	100	50-150	
d-EtFOSA	78	50-150	
d5-EtFOSAA	104	50-150	
d3-MeFOSAA	94	50-150	

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - MS

Sample ID: XB16023-019MS Batch: 33989

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/07/2022 1618

Parameter	Sample Amount (ng/L)	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	ND	13	13		1	100	70-150	03/08/2022 1657
11CI-PF3OUdS	ND	14	11		1	84	70-150 70-150	03/08/2022 1657
8:2 FTS	ND	14	12		1	85	67-138	03/08/2022 1657
6:2 FTS	ND	14	11		1	81	64-140	03/08/2022 1657
4:2 FTS	ND	13	13		1	93	63-143	03/08/2022 1657
GenX	ND	29	27		1	94	70-150	03/08/2022 1657
ADONA	ND	14	14		1	101	70-150	03/08/2022 1657
EtFOSA	ND	14	15		1	107	70-150	03/08/2022 1657
EtFOSAA	ND	14	14		1	99	61-135	03/08/2022 1657
MeFOSAA	ND	14	14		1	94	65-136	03/08/2022 1657
PFBS	1.4	13	14		1	96	72-130	03/08/2022 1657
PFDS	ND	14	5.2	N	1	38	53-142	03/08/2022 1657
PFHpS	ND	14	14		1	101	69-134	03/08/2022 1657
PFNS	ND	14	13		1	91	69-127	03/08/2022 1657
PFPeS	ND	14	16		1	118	71-127	03/08/2022 1657
PFHxS	4.8	13	18		1	101	68-131	03/08/2022 1657
PFBA	51	14	65		1	95	73-129	03/08/2022 1657
PFDA	ND	14	15		1	101	71-129	03/08/2022 1657
PFDoA	ND	14	15		1	106	72-134	03/08/2022 1657
PFHpA	1.1	14	15		1	97	72-130	03/08/2022 1657
PFHxA	2.7	14	16		1	95	72-129	03/08/2022 1657
PFNA	ND	14	15		1	102	69-130	03/08/2022 1657
PFOA	1.1	14	15		1	96	71-133	03/08/2022 1657
PFPeA	3.3	14	17		1	98	72-129	03/08/2022 1657
PFTeDA	ND	14	15		1	102	71-132	03/08/2022 1657
PFTrDA	ND	14	14		1	97	65-144	03/08/2022 1657
PFUdA	ND	14	14		1	99	69-133	03/08/2022 1657
PFOS	5.0	13	18		1	97	65-140	03/08/2022 1657
Surrogate	Q % R	Acce ec L	eptance imit					
13C2_4:2FTS	N 187	50	0-150					
13C2_6:2FTS	127	50	0-150					
13C2_8:2FTS	116	50	0-150					
13C2_PFDoA	87	50	0-150					
13C2_PFTeDA	74	50	0-150					
13C3_PFBS	82	50	0-150					
13C3_PFHxS	91	50	0-150					
13C3-HFPO-DA	90	50	0-150					
13C4_PFBA	N 44	50	0-150					
13C4_PFHpA	96	50	0-150					
13C5_PFHxA	87	50	0-150					
13C5_PFPeA	75	50	0-150					
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LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MS

Sample ID: XB16023-019MS Batch: 33989

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/07/2022 1618

Surrogate	Q	% Rec	Acceptance Limit	
13C6_PFDA		97	50-150	
13C7_PFUdA		91	50-150	
13C8_PFOA		92	50-150	
13C8_PFOS		90	50-150	
13C9_PFNA		98	50-150	
d-EtFOSA		77	50-150	
d5-EtFOSAA		100	50-150	
d3-MeFOSAA		97	50-150	

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - MSD

Sample ID: XB16023-019MD Batch: 33989

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/07/2022 1618

Parameter	Samp Amoi (ng/l	unt A	Spike Imount Ing/L)	Result (ng/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
9CI-PF3ONS	ND		13	12		1	93	12	70-150	30	03/08/2022 1708
11CI-PF3OUdS	ND		13	11		1	88		0 70-150	30	03/08/2022 1708
8:2 FTS	ND		13	12		1	93	5.1	67-138	30	03/08/2022 1708
6:2 FTS	ND		13	12		1	93	9.0	64-140	30	03/08/2022 1708
4:2 FTS	ND	1	13	11		1	84	14	63-143	30	03/08/2022 1708
GenX	ND	2	28	26		1	93	5.9	70-150	30	03/08/2022 1708
ADONA	ND	1	13	13		1	99	6.0	70-150	30	03/08/2022 1708
EtFOSA	ND		14	14		1	100	11	70-150	30	03/08/2022 1708
EtFOSAA	ND		14	12		1	85	19	61-135	30	03/08/2022 1708
MeFOSAA	ND		14	13		1	96	2.8	65-136	30	03/08/2022 1708
PFBS	1.4		12	13		1	95	5.0	72-130	30	03/08/2022 1708
PFDS	ND		13	11	+	1	86	74	53-142	30	03/08/2022 1708
PFHpS	ND		13	13		1	102	4.1	69-134	30	03/08/2022 1708
PFNS	ND		13	12		1	91	3.6	69-127	30	03/08/2022 1708
PFPeS	ND		13 13	14 17		1 1	112 93	10	71-127	30	03/08/2022 1708
PFHxS PFBA	4.8 51		14	62		1	93 81	8.6 4.1	68-131 73-129	30 30	03/08/2022 1708 03/08/2022 1708
PFDA	ND		14	13		1	98	4.1 7.6	73-129	30	03/08/2022 1708
PFDoA	ND		14	14		1	100	10	71-129	30	03/08/2022 1708
PFHpA	1.1		14	16		1	105	3.7	72-134	30	03/08/2022 1708
PFHxA	2.7		14	16		1	93	5.5	72-130	30	03/08/2022 1708
PFNA	ND		14	14		1	102	5.0	69-130	30	03/08/2022 1708
PFOA	1.1		14	15		1	99	1.4	71-133	30	03/08/2022 1708
PFPeA	3.3		14	17		1	102	0.64	72-129	30	03/08/2022 1708
PFTeDA	ND	1	14	14		1	102	4.8	71-132	30	03/08/2022 1708
PFTrDA	ND	1	14	13		1	92	9.6	65-144	30	03/08/2022 1708
PFUdA	ND	1	14	13		1	92	12	69-133	30	03/08/2022 1708
PFOS	5.0	1	13	17		1	96	4.0	65-140	30	03/08/2022 1708
Surrogate	Q	% Rec	A	cceptance Limit							
13C2_4:2FTS	Ν	202		50-150							
13C2_6:2FTS		130		50-150							
13C2_8:2FTS		111		50-150							
13C2_PFDoA		91		50-150							
13C2_PFTeDA		73		50-150							
13C3_PFBS		85		50-150							
13C3_PFHxS		98		50-150							
13C3-HFPO-DA		92		50-150							
13C4_PFBA	N	44		50-150							
13C4_PFHpA		91		50-150							
13C5_PFHxA		91		50-150							
13C5_PFPeA		78		50-150							

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MSD

Sample ID: XB16023-019MD

Batch: 33989

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/07/2022 1618

Surrogate	Q % Rec	Acceptance Limit		
13C6_PFDA	94	50-150		
13C7_PFUdA	93	50-150		
13C8_PFOA	94	50-150		
13C8_PFOS	96	50-150		
13C9_PFNA	100	50-150		
d-EtFOSA	68	50-150		
d5-EtFOSAA	111	50-150		
d3-MeFOSAA	99	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria * = RSD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MB

Sample ID: XQ34087-001 Batch: 34087

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/08/2022 1247

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
9CI-PF3ONS	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 1301
11CI-PF3OUdS	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 1301
8:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 1301
6:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 1301
4:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 1301
GenX	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 1301
ADONA	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 1301
EtFOSA	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 1301
EtFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 1301
MeFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 1301
PFBS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFDS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFHpS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFNS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFPeS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFHxS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFBA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFDoA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFHpA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFHxA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFNA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFOA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFPeA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFTeDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFTrDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFUdA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
PFOS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 1301
Surrogate	Q %R	ec	Accep Lin	otance nit				
13C2_4:2FTS	108	3	50-	150				
13C2_6:2FTS	98			150				
13C2_8:2FTS	102			150				
- 13C2_PFDoA	92			150				
13C2_PFTeDA	83			150				
13C3_PFBS	95			150				
13C3_PFHxS	85			150				
- 13C3-HFPO-DA	100			150				
13C4_PFBA	96			150				
13C4_PFHpA	94			150				
13C5_PFHxA	88			150				
13C5_PFPeA	98			150				
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LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - MB

Sample ID: XQ34087-001 Batch: 34087

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/08/2022 1247

Surrogate	Q % Rec	Acceptance Limit
13C6_PFDA	97	50-150
13C7_PFUdA	91	50-150
13C8_PFOA	91	50-150
13C8_PFOS	91	50-150
13C9_PFNA	95	50-150
d-EtFOSA	77	50-150
d5-EtFOSAA	91	50-150
d3-MeFOSAA	89	50-150

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: XQ34087-002 Batch: 34087

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/08/2022 1247

Parameter	Spike Amount (ng/L)	Result (ng/L) C	Ω Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	15	13	1	90	70-150	03/09/2022 1312
11CI-PF3OUdS	15	13	1	87	70-150	03/09/2022 1312
8:2 FTS	15	13	1	86	67-138	03/09/2022 1312
6:2 FTS	15	16	1	102	64-140	03/09/2022 1312
4:2 FTS	15	14	1	96	63-143	03/09/2022 1312
GenX	32	29	1	90	70-150	03/09/2022 1312
ADONA	15	14	1	96	70-150	03/09/2022 1312
EtFOSA	16	18	1	110	70-150	03/09/2022 1312
EtFOSAA	16	15	1	94	61-135	03/09/2022 1312
MeFOSAA	16	14	1	87	65-136	03/09/2022 1312
PFBS	14	13	1	93	72-130	03/09/2022 1312
PFDS	15	15	1	99	53-142	03/09/2022 1312
PFHpS	15	15	1	100	69-134	03/09/2022 1312
PFNS	15	15	1	97	69-127	03/09/2022 1312
PFPeS	15 15	15	1	101	71-127	03/09/2022 1312
PFHxS	15	14	1	97 102	68-131	03/09/2022 1312
PFBA PFDA	16 16	16 15	1 1	102 91	73-129 71-129	03/09/2022 1312 03/09/2022 1312
PFDoA PFDoA	16	16	1	91	71-129	03/09/2022 1312
PFHpA	16	16	1	101	72-134	03/09/2022 1312
PFHxA	16	16	1	102	72-130	03/09/2022 1312
PFNA	16	15	1	96	69-130	03/09/2022 1312
PFOA	16	15	1	92	71-133	03/09/2022 1312
PFPeA	16	16	1	99	72-129	03/09/2022 1312
PFTeDA	16	16	1	103	71-132	03/09/2022 1312
PFTrDA	16	17	1	104	65-144	03/09/2022 1312
PFUdA	16	16	1	98	69-133	03/09/2022 1312
PFOS	15	14	1	97	65-140	03/09/2022 1312
Surrogate	Q % Rec	Acceptance Limit				
13C2_4:2FTS	104	50-150				
13C2_6:2FTS	96	50-150				
13C2_8:2FTS	105	50-150				
13C2_PFDoA	93	50-150				
13C2_PFTeDA	87	50-150				
13C3_PFBS	100	50-150				
13C3_PFHxS	94	50-150				
13C3-HFPO-DA	98	50-150				
13C4_PFBA	98	50-150				
13C4_PFHpA	100	50-150				
13C5_PFHxA	93	50-150				
	100	50-150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: XQ34087-002 Batch: 34087

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/08/2022 1247

Surrogate Q	% Rec	Acceptance Limit		
13C6_PFDA	103	50-150		
13C7_PFUdA	94	50-150		
13C8_PFOA	98	50-150		
13C8_PFOS	97	50-150		
13C9_PFNA	97	50-150		
d-EtFOSA	74	50-150		
d5-EtFOSAA	93	50-150		
d3-MeFOSAA	95	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria * = RSD is out of criteria

PFAS by LC/MS/MS - MS

Sample ID: XB16023-023MS Batch: 34087

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/08/2022 1247

Parameter	Sample Amount (ng/L)	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
				<u> </u>				
9CI-PF3ONS	ND	150 150	130		1	89	70-150	03/09/2022 1734
11CI-PF3OUdS 8:2 FTS	ND ND	150 150	120 130		1 1	81 83	70-150 67-138	03/09/2022 1734 03/09/2022 1734
6:2 FTS	ND	150	140		1	91	64-140	03/09/2022 1734
4:2 FTS	ND	150	130		1	86	63-143	03/09/2022 1734
GenX	ND	320	270		1	85	70-150	03/09/2022 1734
ADONA	ND	150	140		1	91	70-150	03/09/2022 1734
EtFOSA	ND	160	160		1	100	70-150	03/09/2022 1734
EtFOSAA	ND	160	140		1	90	61-135	03/09/2022 1734
MeFOSAA	ND	160	140		1	85	65-136	03/09/2022 1734
PFBS	ND	140	130		1	85	72-130	03/09/2022 1734
PFDS	ND	150	140		1	93	53-142	03/09/2022 1734
PFHpS	ND	150	150		1	96	69-134	03/09/2022 1734
PFNS	ND	150	150		1	97	69-127	03/09/2022 1734
PFPeS	ND	150	140		1	93	71-127	03/09/2022 1734
PFHxS	28	150	150		1	85	68-131	03/09/2022 1734
PFBA	11	160	160		1	95	73-129	03/09/2022 1734
PFDA	ND	160	140		1	89	71-129	03/09/2022 1734
PFDoA	ND	160	150		1	95	72-134	03/09/2022 1734
PFHpA	ND	160	160		1	94	72-130	03/09/2022 1734
PFHxA	13	160	160		1	93	72-129	03/09/2022 1734
PFNA	ND	160	150		1	94	69-130	03/09/2022 1734
PFOA	ND	160	150 170		1 1	94	71-133	03/09/2022 1734
PFPeA PFTeDA	15 ND	160 160	170 160		1 1	96 97	72-129 71-132	03/09/2022 1734 03/09/2022 1734
PFTrDA	ND	160	150		1	95	65-144	03/09/2022 1734
PFUdA	ND	160	140		1	86	69-133	03/09/2022 1734
PFOS	ND	150	150		1	102	65-140	03/09/2022 1734
Surrogate	Q % Re	Ac	cceptance Limit		·	.02	00 1.10	03/07/2022 1701
13C2_4:2FTS	112		50-150					
- 13C2_6:2FTS	98		50-150					
13C2_8:2FTS	112		50-150					
13C2_PFDoA	91		50-150					
13C2_PFTeDA	84		50-150					
13C3_PFBS	103		50-150					
13C3_PFHxS	94		50-150					
13C3-HFPO-DA	102		50-150					
13C4_PFBA	101		50-150					
13C4_PFHpA	97		50-150					
13C5_PFHxA	90		50-150					
13C5_PFPeA	101		50-150					

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - MS

Sample ID: XB16023-023MS Batch: 34087

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/08/2022 1247

Surrogate	Q % Rec	Acceptance Limit		
13C6_PFDA	104	50-150		
13C7_PFUdA	96	50-150		
13C8_PFOA	93	50-150		
13C8_PFOS	98	50-150		
13C9_PFNA	97	50-150		
d-EtFOSA	82	50-150		
d5-EtFOSAA	91	50-150		
d3-MeFOSAA	94	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - MSD

Sample ID: XB16023-023MD Batch: 34087

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/08/2022 1247

Parameter	Sample Amount (ng/L)	Spike Amoun (ng/L)	t Result (ng/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
9CI-PF3ONS	ND	150	150		1	98	9.5	70-150	30	03/09/2022 1745
11CI-PF3OUdS	ND	150	140		1	92	13	70-150	30	03/09/2022 1745
8:2 FTS	ND	150	140		1	93	11	67-138	30	03/09/2022 1745
6:2 FTS	ND	150	140		1	96	4.6	64-140	30	03/09/2022 1745
4:2 FTS	ND	150	130		1	90	4.4	63-143	30	03/09/2022 1745
GenX	ND	320	300		1	93	8.7	70-150	30	03/09/2022 1745
ADONA	ND	150	150		1	103	12	70-150	30	03/09/2022 1745
EtFOSA	ND	160	160		1	101	0.81	70-150	30	03/09/2022 1745
EtFOSAA	ND	160	160		1	99	9.7	61-135	30	03/09/2022 1745
MeFOSAA	ND	160	150		1	96	12	65-136	30	03/09/2022 1745
PFBS	ND	140	140		1	95	11	72-130	30	03/09/2022 1745
PFDS	ND	150	150		1	97	4.3	53-142	30	03/09/2022 1745
PFHpS	ND	150	150		1	96	0.74	69-134	30	03/09/2022 1745
PFNS	ND	150	140		1	94	3.5	69-127	30	03/09/2022 1745
PFPeS	ND	150 150	150		1	100	7.5 19	71-127	30	03/09/2022 1745
PFHxS PFBA	28 11	150 160	180 170		1 1	106 100	5.1	68-131 73-129	30 30	03/09/2022 1745 03/09/2022 1745
PFDA	ND	160	150		1	95	6.6	73-129	30	03/09/2022 1745
PFDoA	ND	160	160		1	103	8.2	71-129	30	03/09/2022 1745
PFHpA	ND	160	160		1	98	4.0	72-134	30	03/09/2022 1745
PFHxA	13	160	170		1	96	3.1	72-130	30	03/09/2022 1745
PFNA	ND	160	160		1	98	3.5	69-130	30	03/09/2022 1745
PFOA	ND	160	150		1	94	0.16	71-133	30	03/09/2022 1745
PFPeA	15	160	170		1	95	0.76	72-129	30	03/09/2022 1745
PFTeDA	ND	160	160		1	101	4.1	71-132	30	03/09/2022 1745
PFTrDA	ND	160	150		1	96	1.9	65-144	30	03/09/2022 1745
PFUdA	ND	160	160		1	102	17	69-133	30	03/09/2022 1745
PFOS	ND	150	160		1	108	5.4	65-140	30	03/09/2022 1745
Surrogate	Q % Red	A	cceptance Limit							
13C2_4:2FTS	113		50-150							
13C2_6:2FTS	102		50-150							
13C2_8:2FTS	109		50-150							
13C2_PFDoA	92		50-150							
13C2_PFTeDA	85		50-150							
13C3_PFBS	102		50-150							
13C3_PFHxS	94		50-150							
13C3-HFPO-DA	106		50-150							
13C4_PFBA	107		50-150							
13C4_PFHpA	102		50-150							
13C5_PFHxA	96		50-150							
13C5_PFPeA	103		50-150							
1303_F1 F6A	103		30-130							

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MSD

Sample ID: XB16023-023MD Batch: 34087

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/08/2022 1247

Surrogate	Q % Rec	Acceptance Limit	
13C6_PFDA	106	50-150	
13C7_PFUdA	92	50-150	
13C8_PFOA	98	50-150	
13C8_PFOS	96	50-150	
13C9_PFNA	100	50-150	
d-EtFOSA	81	50-150	
d5-EtFOSAA	91	50-150	
d3-MeFOSAA	92	50-150	

LOQ = Limit of Quantitation

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N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - MB

Sample ID: XQ34285-001 Batch: 34285

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/09/2022 1643

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
9CI-PF3ONS	4.0	U	1	8.0	4.0	2.0	ng/L	03/10/2022 1842
11CI-PF3OUdS	4.0	U	1	8.0	4.0	2.0	ng/L	03/10/2022 1842
8:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/10/2022 1842
6:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/10/2022 1842
4:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/10/2022 1842
GenX	4.0	U	1	8.0	4.0	2.0	ng/L	03/10/2022 1842
ADONA	4.0	U	1	8.0	4.0	2.0	ng/L	03/10/2022 1842
EtFOSA	4.0	U	1	8.0	4.0	2.0	ng/L	03/10/2022 1842
EtFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	03/10/2022 1842
MeFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	03/10/2022 1842
PFBS	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFDS	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFHpS	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFNS	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFPeS	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFHxS	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFBA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFDoA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFHpA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFHxA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFNA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFOA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFPeA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFTeDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFTrDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFUdA	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
PFOS	2.0	U	1	4.0	2.0	1.0	ng/L	03/10/2022 1842
Surrogate	Q %R	ec	Accep Lin	tance nit				
13C2_4:2FTS	116	<u>.</u>	50-	150				
13C2_6:2FTS	121	l	50-	150				
13C2_8:2FTS	103	3	50-	150				
13C2_PFDoA	97		50-	150				
13C2_PFTeDA	95		50-	150				
13C3_PFBS	101	l	50-	150				
13C3_PFHxS	104	1	50-	150				
13C3-HFPO-DA	92		50-	150				
13C4_PFBA	100)	50-	150				
13C4_PFHpA	100)	50-	150				
13C5_PFHxA	100)	50-	150				

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I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - MB

Sample ID: XQ34285-001 Batch: 34285

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/09/2022 1643

Surrogate	Q % Rec	Acceptance Limit	
13C6_PFDA	104	50-150	
13C7_PFUdA	98	50-150	
13C8_PFOA	104	50-150	
13C8_PFOS	99	50-150	
13C9_PFNA	99	50-150	
d-EtFOSA	79	50-150	
d5-EtFOSAA	104	50-150	
d3-MeFOSAA	93	50-150	

LOQ = Limit of Quantitation

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DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: XQ34285-002 Batch: 34285

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/09/2022 1643

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	15	14	1	95	70-150	03/10/2022 1853
11CI-PF3OUdS	15	14	1	93	70-150	03/10/2022 1853
8:2 FTS	15	14	1	91	67-138	03/10/2022 1853
6:2 FTS	15	14	1	91	64-140	03/10/2022 1853
4:2 FTS	15	13	1	90	63-143	03/10/2022 1853
GenX	32	28	1	87	70-150	03/10/2022 1853
ADONA	15	15	1	99	70-150	03/10/2022 1853
EtFOSA	16	14	1	90	70-150	03/10/2022 1853
EtFOSAA	16	14	1	89	61-135	03/10/2022 1853
MeFOSAA	16	13	1	84	65-136	03/10/2022 1853
PFBS	14	13	1	93	72-130	03/10/2022 1853
PFDS	15	15	1	95	53-142	03/10/2022 1853
PFHpS	15	15	1	98	69-134	03/10/2022 1853
PFNS	15	14	1	92	69-127	03/10/2022 1853
PFPeS	15	14	1	92	71-127	03/10/2022 1853
PFHxS	15	14	1	99	68-131	03/10/2022 1853
PFBA	16	15	1	91	73-129	03/10/2022 1853
PFDA	16	16	1	97	71-129	03/10/2022 1853
PFDoA	16	15	1	92	72-134	03/10/2022 1853
PFHpA	16	16	1	100	72-130	03/10/2022 1853
PFHxA PFNA	16 16	15 15	1 1	93 95	72-129 69-130	03/10/2022 1853 03/10/2022 1853
PFOA	16	15	1	93 92	71-133	03/10/2022 1853
PFPeA	16	15	1	92	71-133	03/10/2022 1853
PFTeDA	16	15	1	93	71-132	03/10/2022 1853
PFTrDA	16	15	1	96	65-144	03/10/2022 1853
PFUdA	16	14	1	87	69-133	03/10/2022 1853
PFOS	15	13	1	87	65-140	03/10/2022 1853
Surrogate	Q % Rec	Acceptano Limit	ce			
13C2_4:2FTS	107	50-150				
_ 13C2_6:2FTS	122	50-150				
13C2_8:2FTS	97	50-150				
13C2_PFDoA	101	50-150				
13C2_PFTeDA	93	50-150				
13C3_PFBS	101	50-150				
13C3_PFHxS	100	50-150				
13C3-HFPO-DA	95	50-150				
13C4_PFBA	98	50-150				
13C4_PFHpA	98	50-150				
13C5_PFHxA	97	50-150				
13C5_PFPeA	101	50-150				

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DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: XQ34285-002 Batch: 34285

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/09/2022 1643

Surrogate	Q % Rec	Acceptance Limit	
13C6_PFDA	96	50-150	
13C7_PFUdA	104	50-150	
13C8_PFOA	104	50-150	
13C8_PFOS	96	50-150	
13C9_PFNA	97	50-150	
d-EtFOSA	91	50-150	
d5-EtFOSAA	101	50-150	
d3-MeFOSAA	91	50-150	

LOQ = Limit of Quantitation

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N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Chain of Custody and Miscellaneous Documents

PAGE 1 OF 3	LABORATORY NAME AND CONTACT:	ò	20 mars 50	1		COMMENTS		気害を必要を	XB16023	KBS2								-	02/15/22 1630	2,16/2, 1000 DATE TIME		4/02R FORM NO. TINUS-001	
No. 2564	140) 931 - 8033 Pare Anal	NUMBER 541-7	CITY, STATE VO.ST		PRESERVATIVE NOTE NOTE NOTE NOTE NOTE NOTE NOTE NOT	No. OF CONTRINERS	X X	7										× 4	1. RECEIVED BY FLAGX		12.58.2.7°C	COPY) PINK (FILE COPY)	
CHAIN OF CUSTODY	PROJECT MANAGER	FIELD OPERATIONS LEADER	CARRIERWAYBILL NUMBER			TOP DEPTH (FT) BOTTOM DEPTH (FT) MATRIX (GW, SO, SW, S ETC.) COLLECTION METHOD GMAB (G) COMP (C)	3 7 62 6	L L 1	14 51	23 27	33 37	-	18	1.	73 77		43 47 6W V	1 ACG	DATE TIME	DATE TIME		YELLOW (FIELD COPY)	
TE Tetra Tech, Inc.	FACILITY	SAMPLERS (SIGNATURE)	Chuck Saden		STANDARD TAT W. RUSH TAT G. 48 br. G. 72 br. G. 7 day G. 14 day		TIME	C project of the partial of the factor of the partial of the parti	C 1 1000 00 00 00 00 00 00 00 00 00 00 00	т.			1335 EST-DEPOND - COLO - SO DESTA 15	אן היימגנים יים ליוצי הישה אם 187 סטצו		Predentations - Company of the		(2) 1000 (5) EA-2020 (50)	1. RELINGUISHED BY		3. RELINQUISHED BY	COMMENTS DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE)	

PAGE 2 OF 3	ID CONTACT:	Shaltten - (14th) Jimits	A	1531	Colora 5.0	Ť.						\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	COMMENTS			XBARDS		KE52		405/1150 Collected								4	DATE LEGG	DATE TIME	4/02R
No. 2565	LABORATORY	Fact Ana	ADDRESS	ICE VEIN 1612	INEST Col	Ι.	Ì	1225	1		1	/		<u> </u>														1 Ex		4-18,32°C	DINK (FILE COPY)
NUMBER NO.	PHONE NUMBER	(4/2) 42 - S623	PHONE NUMBER	(321)2-11-5(128)		BOYT GRINIATION	PLASTIC (P) or GLASS (G)	PRESERVATIVE	OSED	***	AL.				X			1	G	و	ત						- К	1. RECEIVED BY GEA	2. RECEIVED BY	3. RECEIVED BY / C	, realization
USTODY	TMANAGER	Mark Johns	FIELD OPERATIONS LEADER	Chuck Sorden	CARRIERWAYBILL NUMBER			'00'		.ws.	N' BO	х (ал (с) (с)	(.01		7 6W G	- SC /	34	19 1	27	37 1	47 610	1 QC	7 60	14 61V	1 &C	14 Can 1	27 Bus 6	TIME (4.30)	TIME	TIME	
CHAIN OF CUSTODY	PROJEC	Mark	FIELD OF	Ches	CARRIER				day		(14)	HTG	TA20	1	8	1	01 81	70	64	18 33	43	1	19 3	19 10	1	19 15	23	T	DATA	DATE	-
TE Tetra Tech, Inc.	FACILITY	12.0-04.561 KSC-F\$1	ATUREL	Chuck Sorden				STANDARD TAT CX			~~~			TIME SAMPLE ID	21.40-604-0.300-4008-181 0x70 2	0330		651-0med3-07.0-2020-3	FSI - OPIOSE - O.S. C AGAGO-15				1	1055 FSI-DETWAY-012,0 20320215	60-21802604-83-15-1011	21.80-60-60-C10-1000110-123 2111	537	\mathbf{x}	2. RELINQUISHED BY	3. RELINOUISHED BY	COMMENTS

PAGE 3 OF 3	PACK ANALYTICAL TOTAL SALLY ADDRESS OUT DAY OF THE STATE LABORATORY AND SALLY SALLY STATE	JS, 26			SUCCESSION OF THE PROPERTY OF	CAMBRICATION .		XB16023	K282										DATE 2/2/20) 124 101			4/02R FORM NO. TINUS-DO1
32 1	Pack Angletical ADDRESS OG Ventered OS Ventered CITY STATE		14 10	July with														+		1	Jer. 1.9,3.2°C		PINK (FILE COPY)
NUMBER No. 2582	PHONE NUMBER (537) (142) 931-8633 PHONE NUMBER (331) 571-7550	5	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	STIG THE STATE OF STA	133	\ \ \ \									_	×		. RECEIVED BY FZ & £X	2. RECEIVED BY CALL	RECEIVED BY (C		
Z					OMP (C)	o .	1								-	7	G.	V	F		ಣ		YELLOW (FIELD COPY)
,ao	NAGER MAGER TIONS LEV MACACA			'0° (0°)	ATRIX (GW, SO, SW, 5 TC.) OLLECTION METHOD	٥,	3 ~					÷	90	SC	7		0 0 0	N.	1ME (C.30		TIME		/ELLOW (F
CHAIN OF CUSTODY	PROJECT MANAGER ALLO OPERATIONS LEADER CHUCK Sonder CHUCK Sonder CARRIERWAYBILL NUMBER				(T4) HT430 MOTTO			7	ī	5	77	37	47	١	ı	1	Ĭ,	1	15/23		E		
CHAIN	第 公 語 2 A	,			(TR) HT GEO 40			\vdash	2	(5		333	43	1	1	1	_1	-	DAITE OALIS	201	DATE		
	53			14 day	аі мошчэо		1-	200	5 30	8 30	c 6	s, S	5 30	1	1	1	1	1					AMPLE)
Tetra Tech, Inc.	FACILITY: KSC-FSI IGNATURE) Chack Sorden			T以 48 hr. ロ72 hr. ロ7 day		SAMPLE ID		F.SI-0PT005-005:00-2-09490-127	FS1-0P0005-012.0-2022.0215	FSI-DPTODOS OID COLOROSALS	151-press-035.0-20209	651-00Fecos -035.0-2020215	\$1.00000-0750-2000190-187	FSI-EB-20220215-03	F\$1-F0-3020215-01	FA-FO-2002 0215-07-187	FS1-10-2022 W-15-03		ED BY	ED SY FED EX	ED BY		WHITE (ACCOMPANIES SAMPLE)
Ę,	PROJECT NO: 11,2,C-07,5'%) SAMPLERS (SIGNATURE)			STANDARD TAT ☑ RUSH TAT ☐ ☐ 24 hr. ☐ 48 h	~660€ AA∃	HINE C	030	1	. 1	5141	1435	1500	1530	1540	0000	J. (2000)	5 0000		1. RELINGUISHED BY	2. RELINQUISHED BY	3. RELINQUISHED BY	COMMENTS	DISTRIBUTION:



Samples Receipt Checklist (SRC) (ME0018C-15) Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020 Page 1 of 1

Sample Receipt Checklist (SRC)

Client: TETRA TECH	Cooler inspected by/date: JSH / 02/t6/2022 Lot #: XB16023
The state of the s	Pace Client UPS / FedEx Other:
Ycs No	1. Were custody seals present on the cooler?
	A 2. If custody seals were present, were they intact and unbroken?
pH Strip ID; NA	Chlorine Strip ID: NA Tested by: NA
	on receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA
	3.2 °C NA /NA °C NA /NA °C
	Blank Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C
Method of coolant:	Wet Ice
Yes No No	A 3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
✓ Yes No No	A 4. Is the commercial courier's packing stip attached to this form?
✓ Yes No	Were proper custody procedures (relinquished/received) followed?
✓ Yes No	6. Were sample IDs listed on the CQC?
✓ Yes No	7. Were sample IDs listed on all sample containers?
Yes No	Was collection date & time listed on the COC?
✓ Yes No	Was collection date & time listed on all sample containers?
✓ Yes No	10. Did all container label information (ID, date, time) agree with the COC?
✓ Yes No	11. Were tests to be performed listed on the COC?
	12. Did all samples arrive in the proper containers for each test and/or in good condition
Yes No	(unbroken, fids on, etc.)?
Ves □No	13. Was adequate sample volume available?
✓ Yes No	14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes V No	15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
	16 For VOA and DSV 175 complex group bubbles present 28 are size V//No. 6 - 2 - 1 - 1 - 1
Yes No No	A in any of the VOA vials?
Yes No No	A 17. Were all DRO/metals/nutrient samples received at a pH of < 2?
Yes No No	A 18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 97
Yes No No	A 19. Were all applicable NH ₃ /TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of
	residual colorine?
Yes No VN	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc)
☐Yes ☑No	correctly transcribed from the COC into the comment section in LIMS? 21. Was the quote number listed on the container label? If yes, Quote #
	(Must be completed for any sample(s) incorrectly preserved or with headspace.)
Sample(s) NA	were received incorrectly preserved and were adjusted accordingly
in sample receiving with	
Time of preservation NA	. If more than one preservative is needed, please note in the comments below.
Sample(s) NA	were received with bubbles >6 mm in diameter.
Samples(s) NA	were received with TRC > 0.5 mg/L (If #19 is $n\sigma$) and were
adjusted accordingly in s	ample receiving with sodium thiosulfate (Na ₂ S ₂ O ₃) with Shealy ID: NA
SR barcode labels applied	d by: MC11 Date: 02/16/2022
<u> </u>	d by
Comments:	



Report of Analysis

Tetra Tech

Foster Plaza 7 661 Anderson Drive Pittsburgh, PA 15220 Attention: Mark Jonnet

Project Name: KSC-FS1

Project Number: 112G09581

Lot Number: XB18038

Date Completed:03/24/2022

Kathy Smith

03/24/2022 9:30 AM
Approved and released by:
Project Manager II: **Kathy E. Smith**





The electronic signature above is the equivalent of a handwritten signature.

This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

Case Narrative Tetra Tech Lot Number: XB18038

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the Pace Quality Assurance Management Plan (QAMP), applicable Shealy standard operating procedures (SOPs), the 2003 NELAC standard, and Shealy policies. Additionally, the DoD QSM version 5.3 has been followed for these samples, and specifically Table B-15 was followed for all PFAS samples. Any exceptions to the QAMP, SOPs, NELAC standards, the DoD QSM, or policies are qualified on the results page or discussed below.

All QC associated with these samples was in compliance with DOD QSM 5.3 table B-15 and our PFAS SOP.

Correction factors (CF) are used to calculate the original sample concentration. The CF is the inverse of the concentration factor (sample volume / extract final volume) times the dilution factor (DF). For undiluted analysis. For undiluted analysis, the extract is prepared for injection by adding 182 uL of sample extract + 8 uL of reagent water + 10 uL of internal standard solution to a polypropylene autosampler vial. An extra correction factor of 0.91 (182 uL / 200 uL = 0.91) applies. The CF is calculated as follows:

CF = DF * FV / Vo

FV is volume of extract (mL)
Vo is initial sample volume (mL)
DF is dilution factor. For undiluted analysis, DF = 1/0.91.

Sample concentration for aqueous samples: Concentration (ng/L) = Cs*CF,

$$C_{S} = \frac{\left(\frac{(A_{S} \times C_{IS})}{A_{IS}}\right) - B}{M1}$$

Where

C_s is on column concentration of target analyte in the sample (ng/L)
C_{is} is concentration of internal standard in the sample (ng/L)
A_s is peak response of target analyte in the sample
A_{is} is peak response of internal standard in the sample
M1 is the average RF from ICAL or the slope from linear regression ICAL
B is the y-intercept from the ICAL

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Samples XB18038-001, XB18038-002, XB18038-003, XB18038-004, XB18038-005, XB18038-006, XB18038-010, XB18038-011, XB18038-012, XB18038-017, XB18038-018, XB18038-019, XB18038-021 required centrifugation prior to extraction, due to excessive solids present in the samples. Centrifugation was performed following the PFAS Aqueous Centrifuge Protocol; samples were spiked with Surrogate (SUR; Extracted Internal Standard/EIS) and shaken vigorously before being poured into a conical bottle and centrifuged. The centrifuged aqueous sample was decanted back into the original sample bottle, off of the condensed solids remaining in the centrifuge bottle. Original sample bottle was rinsed as normal and centrifuge bottle was rinsed with 4mL of MeOH. Centrifuge bottle rinsate was added to the elution. Samples concentrated to <10mL and reconstituted to 10mL using MeOH by transfer pipet.

Despite centrifugation, for samples XB18038-001, XB18038-021, sample matrix prevented full volume from being extracted, precluding method mandated bottle rinse. Elution solvent was aliquoted directly into the reservoir, rinsing the inside. Surrogate recovery may be adversely affected.

Samples XB18038-007, XB18038-008, XB18038-009, XB18038-014, XB18038-015, XB18038-016 were prepped at a 10X dilution due to sample matrix.

Surrogate recovery for the following samples was outside control limits: XB18038-001, XB18038-002, XB18038-003, XB18038-004, XB18038-006, XB18038-010, XB18038-011, XB18038-012, XB18038-017, XB18038-018, XB18038-019, XB18038-021. Evidence of matrix interference is present; therefore, reextraction and/or re-analysis was not performed.

The MS/MSD associated with sample XB18038-010 had compounds recovered outside of the acceptance limits. The LCS was recovered within the required acceptance limits; therefore, this demonstrates a matrix effect and data quality is not impacted.

The LCS associated with batch 34241 had 6:2 FTS recovered above the acceptance limits. This demonstrates a high bias on analytical results. There were no detections for this compound in the samples associated with this batch; therefore, data quality is not impacted.

Sample Summary

Tetra Tech Lot Number: XB18038

Project Name: KSC-FS1 Project Number: 112G09581

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	FS1-DPT0006-005.0-20220216	Aqueous	02/16/2022 0810	02/18/2022
002	FS1-DPT0006-012.0-20220216	Aqueous	02/16/2022 0830	02/18/2022
003	FS1-DPT0006-017.0-20220216	Aqueous	02/16/2022 0850	02/18/2022
004	FS1-DPT0006-025.0-20220216	Aqueous	02/16/2022 0915	02/18/2022
005	FS1-DPT0006-035.0-20220216	Aqueous	02/16/2022 0940	02/18/2022
006	FS1-DPT0006-045.0-20220216	Aqueous	02/16/2022 1010	02/18/2022
007	FS1-DPT0007-005.0-20220216	Aqueous	02/16/2022 1120	02/18/2022
800	FS1-DPT0007-012.0-20220216	Aqueous	02/16/2022 1140	02/18/2022
009	FS1-DPT0007-017.0-20220216	Aqueous	02/16/2022 1200	02/18/2022
010	FS1-DPT0007-025.0-20220216	Aqueous	02/16/2022 1225	02/18/2022
011	FS1-DPT0007-035.0-20220216	Aqueous	02/16/2022 1250	02/18/2022
012	FS1-DPT0007-045.0-20220216	Aqueous	02/16/2022 1315	02/18/2022
013	FS1-EB-20220216-01	Aqueous	02/16/2022 1400	02/18/2022
014	FS1-DPT0008-005.0-20220216	Aqueous	02/16/2022 1445	02/18/2022
015	FS1-DPT0008-012.0-20220216	Aqueous	02/16/2022 1515	02/18/2022
016	FS1-DPT0008-017.0-20220216	Aqueous	02/16/2022 1545	02/18/2022
017	FS1-DPT0008-025.0-20220216	Aqueous	02/16/2022 1615	02/18/2022
018	FS1-DPT0008-035.0-20220217	Aqueous	02/17/2022 0720	02/18/2022
019	FS1-DPT0008-045.0-20220217	Aqueous	02/17/2022 0745	02/18/2022
020	FS1-FB-20220217-01	Aqueous	02/17/2022 0750	02/18/2022
021	FS1-FD-20220216-01	Aqueous	02/16/2022	02/18/2022

(21 samples)

Detection Summary Tetra Tech

Lot Number: XB18038 Project Name: KSC-FS1 Project Number: 112G09581

Sample	e Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	FS1-DPT0006-005.0-20220216	Aqueous	6:2 FTS	PFAS by ID	6.2	I	ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFBS	PFAS by ID	5.8	1	ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFHpS	PFAS by ID	31		ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFNS	PFAS by ID	1.8	IQ	ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFPeS	PFAS by ID	11		ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFHxS	PFAS by ID	360		ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFBA	PFAS by ID	76	Q	ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFDA	PFAS by ID	6.2	1	ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFHpA	PFAS by ID	110		ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFHxA	PFAS by ID	110		ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFNA	PFAS by ID	110	Q	ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous		PFAS by ID	110	Q	ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFPeA	PFAS by ID	130		ng/L	13
001	FS1-DPT0006-005.0-20220216	Aqueous	PFOS	PFAS by ID	1800	D	ng/L	13
002	FS1-DPT0006-012.0-20220216	Aqueous	6:2 FTS	PFAS by ID	20000	D	ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous	4:2 FTS	PFAS by ID	88		ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous	PFBS	PFAS by ID	2700	D	ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous	PFHpS	PFAS by ID	4400	D	ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous	-	PFAS by ID	3300	D	ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous	PFHxS	PFAS by ID	27000	D	ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous	PFBA	PFAS by ID	1000	D	ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous	PFHpA	PFAS by ID	1700	D	ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous	•	PFAS by ID	4100	D	ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous	PFNA	PFAS by ID	490		ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous	PFOA	PFAS by ID	6200	D	ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous		PFAS by ID	3100	D	ng/L	15
002	FS1-DPT0006-012.0-20220216	Aqueous		PFAS by ID	27000	D	ng/L	15
003	FS1-DPT0006-017.0-20220216	Aqueous	6:2 FTS	PFAS by ID	95000	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous	4:2 FTS	PFAS by ID	3800	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous	PFBS	PFAS by ID	7000	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous	PFHpS	PFAS by ID	2000	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous	PFPeS	PFAS by ID	9000	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous	PFHxS	PFAS by ID	100000	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous		PFAS by ID	4200	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous	PFHpA	PFAS by ID	10000	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous	PFHxA	PFAS by ID	21000	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous	PFNA	PFAS by ID	96		ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous		PFAS by ID	12000	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous	PFPeA	PFAS by ID	15000	D	ng/L	17
003	FS1-DPT0006-017.0-20220216	Aqueous		PFAS by ID	25000	D	ng/L	17
004	FS1-DPT0006-025.0-20220216	Aqueous		PFAS by ID	22000	D	ng/L	19
004	FS1-DPT0006-025.0-20220216	Aqueous		PFAS by ID	3100	D	ng/L	19
004	FS1-DPT0006-025.0-20220216	Aqueous		PFAS by ID	2100	D	ng/L	19
		•		,			5	

Detection Summary (Continued)

Lot Number: XB18038

Sampl	le Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	FS1-DPT0006-025.0-20220216	Aqueous		PFAS by ID	42	Q	ng/L	19
004	FS1-DPT0006-025.0-20220216	Aqueous	•	PFAS by ID	2400	D	ng/L	19
004	FS1-DPT0006-025.0-20220216	Aqueous		PFAS by ID	18000	D	ng/L	19
004	FS1-DPT0006-025.0-20220216	Aqueous		PFAS by ID	2300	D	ng/L	19
004	FS1-DPT0006-025.0-20220216	Aqueous		PFAS by ID	2300	D	ng/L	19
004	FS1-DPT0006-025.0-20220216	Aqueous	*	PFAS by ID	9300	D	ng/L	19
004	FS1-DPT0006-025.0-20220216	Aqueous		PFAS by ID	830	D	ng/L	19
004	FS1-DPT0006-025.0-20220216	Aqueous		PFAS by ID	9100	D	ng/L	19
004	FS1-DPT0006-025.0-20220216	Aqueous	PFOS	PFAS by ID	49		ng/L	19
005	FS1-DPT0006-035.0-20220216	Aqueous	6:2 FTS	PFAS by ID	160	D	ng/L	21
005	FS1-DPT0006-035.0-20220216	Aqueous	PFBS	PFAS by ID	550	D	ng/L	21
005	FS1-DPT0006-035.0-20220216	Aqueous		PFAS by ID	28	ID	ng/L	21
005	FS1-DPT0006-035.0-20220216	Aqueous	PFPeS	PFAS by ID	490	D	ng/L	21
005	FS1-DPT0006-035.0-20220216	Aqueous	PFHxS	PFAS by ID	3800	D	ng/L	21
005	FS1-DPT0006-035.0-20220216	Aqueous	PFBA	PFAS by ID	110	D	ng/L	21
005	FS1-DPT0006-035.0-20220216	Aqueous	PFHpA	PFAS by ID	180	D	ng/L	21
005	FS1-DPT0006-035.0-20220216	Aqueous	PFHxA	PFAS by ID	810	D	ng/L	21
005	FS1-DPT0006-035.0-20220216	Aqueous	PFOA	PFAS by ID	690	D	ng/L	21
005	FS1-DPT0006-035.0-20220216	Aqueous	PFPeA	PFAS by ID	230	D	ng/L	21
005	FS1-DPT0006-035.0-20220216	Aqueous	PFOS	PFAS by ID	99	D	ng/L	21
006	FS1-DPT0006-045.0-20220216	Aqueous	6:2 FTS	PFAS by ID	2.6	IQ	ng/L	23
006	FS1-DPT0006-045.0-20220216	Aqueous	PFHxS	PFAS by ID	3.9		ng/L	23
006	FS1-DPT0006-045.0-20220216	Aqueous	PFOS	PFAS by ID	6.8		ng/L	23
007	FS1-DPT0007-005.0-20220216	Aqueous	PFHxS	PFAS by ID	48		ng/L	25
007	FS1-DPT0007-005.0-20220216	Aqueous	PFHxA	PFAS by ID	10	I	ng/L	25
007	FS1-DPT0007-005.0-20220216	Aqueous	PFOS	PFAS by ID	47		ng/L	25
800	FS1-DPT0007-012.0-20220216	Aqueous	PFBS	PFAS by ID	14	ı	ng/L	27
800	FS1-DPT0007-012.0-20220216	Aqueous	PFPeS	PFAS by ID	17	I	ng/L	27
800	FS1-DPT0007-012.0-20220216	Aqueous	PFHxS	PFAS by ID	79		ng/L	27
009	FS1-DPT0007-017.0-20220216	Aqueous	PFBS	PFAS by ID	19	I	ng/L	29
009	FS1-DPT0007-017.0-20220216	Aqueous	PFPeS	PFAS by ID	21	I	ng/L	29
009	FS1-DPT0007-017.0-20220216	Aqueous	PFHxS	PFAS by ID	100		ng/L	29
010	FS1-DPT0007-025.0-20220216	Aqueous		PFAS by ID	76	S	ng/L	31
010	FS1-DPT0007-025.0-20220216	Aqueous	PFPeS	PFAS by ID	43		ng/L	31
010	FS1-DPT0007-025.0-20220216	Aqueous	PFHxS	PFAS by ID	29	S	ng/L	31
010	FS1-DPT0007-025.0-20220216	Aqueous	PFBA	PFAS by ID	4.1	Q	ng/L	31
010	FS1-DPT0007-025.0-20220216	Aqueous	PFHpA	PFAS by ID	2.0	I	ng/L	31
010	FS1-DPT0007-025.0-20220216	Aqueous	PFHxA	PFAS by ID	10		ng/L	31
010	FS1-DPT0007-025.0-20220216	Aqueous	PFPeA	PFAS by ID	6.2		ng/L	31
010	FS1-DPT0007-025.0-20220216	Aqueous	PFOS	PFAS by ID	1.5	I	ng/L	31
011	FS1-DPT0007-035.0-20220216	Aqueous	6:2 FTS	PFAS by ID	7500	D	ng/L	33
011	FS1-DPT0007-035.0-20220216	Aqueous	4:2 FTS	PFAS by ID	530	ID	ng/L	33
011	FS1-DPT0007-035.0-20220216	Aqueous	PFBS	PFAS by ID	4300	D	ng/L	33
011	FS1-DPT0007-035.0-20220216	Aqueous	PFHpS	PFAS by ID	240	Q	ng/L	33
011	FS1-DPT0007-035.0-20220216	Aqueous	PFPeS	PFAS by ID	3300	D	ng/L	33
011	FS1-DPT0007-035.0-20220216	Aqueous	PFHxS	PFAS by ID	15000	D	ng/L	33
011	FS1-DPT0007-035.0-20220216	Aqueous	PFBA	PFAS by ID	830	D	ng/L	33
011	FS1-DPT0007-035.0-20220216	Aqueous	PFHpA	PFAS by ID	650	D	ng/L	33

Detection Summary (Continued)

Lot Number: XB18038

Sampl	le Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
011	FS1-DPT0007-035.0-20220216	Aqueous	PFHxA	PFAS by ID	4600	D	ng/L	33
011	FS1-DPT0007-035.0-20220216	Aqueous	PFOA	PFAS by ID	510	D	ng/L	33
011	FS1-DPT0007-035.0-20220216	Aqueous	PFPeA	PFAS by ID	1900	D	ng/L	33
011	FS1-DPT0007-035.0-20220216	Aqueous	PFOS	PFAS by ID	94		ng/L	33
012	FS1-DPT0007-045.0-20220216	Aqueous	6:2 FTS	PFAS by ID	1.9	IQ	ng/L	35
012	FS1-DPT0007-045.0-20220216	Aqueous	PFBS	PFAS by ID	2.4	1	ng/L	35
012	FS1-DPT0007-045.0-20220216	Aqueous	PFHpS	PFAS by ID	0.89	I	ng/L	35
012	FS1-DPT0007-045.0-20220216	Aqueous	PFPeS	PFAS by ID	2.8	I	ng/L	35
012	FS1-DPT0007-045.0-20220216	Aqueous		PFAS by ID	12		ng/L	35
012	FS1-DPT0007-045.0-20220216	Aqueous	PFBA	PFAS by ID	1.1	I	ng/L	35
012	FS1-DPT0007-045.0-20220216	Aqueous	•	PFAS by ID	1.9	I	ng/L	35
012	FS1-DPT0007-045.0-20220216	Aqueous		PFAS by ID	4.1		ng/L	35
012	FS1-DPT0007-045.0-20220216	Aqueous		PFAS by ID	28		ng/L	35
012	FS1-DPT0007-045.0-20220216	Aqueous		PFAS by ID	1.6	ı	ng/L	35
012	FS1-DPT0007-045.0-20220216	Aqueous		PFAS by ID	7.6		ng/L	35
014	FS1-DPT0008-005.0-20220216	Aqueous		PFAS by ID	13		ng/L	39
014	FS1-DPT0008-005.0-20220216	Aqueous		PFAS by ID	17		ng/L	39
015	FS1-DPT0008-012.0-20220216	Aqueous		PFAS by ID	13		ng/L	41
015	FS1-DPT0008-012.0-20220216	Aqueous		PFAS by ID	18	I	ng/L	41
016	FS1-DPT0008-017.0-20220216	Aqueous		PFAS by ID	57		ng/L	43
016 017	FS1-DPT0008-017.0-20220216 FS1-DPT0008-025.0-20220216	Aqueous Aqueous		PFAS by ID PFAS by ID	11 10	ı	ng/L	43 45
017	FS1-DPT0008-025.0-20220216	Aqueous		PFAS by ID	19		ng/L ng/L	45
017	FS1-DPT0008-025.0-20220216	Aqueous		PFAS by ID	1.5	1	ng/L	45
017	FS1-DPT0008-025.0-20220216	Aqueous	•	PFAS by ID	25	•	ng/L	45
017	FS1-DPT0008-025.0-20220216	Aqueous		PFAS by ID	490		ng/L	45
017	FS1-DPT0008-025.0-20220216	Aqueous		PFAS by ID	11	Q	ng/L	45
017	FS1-DPT0008-025.0-20220216	Aqueous		PFAS by ID	11		ng/L	45
017	FS1-DPT0008-025.0-20220216	Aqueous	PFHxA	PFAS by ID	41		ng/L	45
017	FS1-DPT0008-025.0-20220216	Aqueous	PFOA	PFAS by ID	130		ng/L	45
017	FS1-DPT0008-025.0-20220216	Aqueous	PFPeA	PFAS by ID	25		ng/L	45
017	FS1-DPT0008-025.0-20220216	Aqueous	PFOS	PFAS by ID	1.2	I	ng/L	45
018	FS1-DPT0008-035.0-20220217	Aqueous	PFBS	PFAS by ID	5.2		ng/L	47
018	FS1-DPT0008-035.0-20220217	Aqueous	PFPeS	PFAS by ID	4.9		ng/L	47
018	FS1-DPT0008-035.0-20220217	Aqueous	PFHxS	PFAS by ID	8.8		ng/L	47
018	FS1-DPT0008-035.0-20220217	Aqueous	PFBA	PFAS by ID	1.8	I	ng/L	47
018	FS1-DPT0008-035.0-20220217	Aqueous	PFHpA	PFAS by ID	1.0	I	ng/L	47
018	FS1-DPT0008-035.0-20220217	Aqueous	PFHxA	PFAS by ID	9.8		ng/L	47
018	FS1-DPT0008-035.0-20220217	Aqueous	PFOA	PFAS by ID	2.6	I	ng/L	47
021	FS1-FD-20220216-01	Aqueous	PFBS	PFAS by ID	86		ng/L	53
021	FS1-FD-20220216-01	Aqueous		PFAS by ID	48		ng/L	53
021	FS1-FD-20220216-01	Aqueous		PFAS by ID	36		ng/L	53
021	FS1-FD-20220216-01	Aqueous		PFAS by ID	3.8	IQ	ng/L	53
021	FS1-FD-20220216-01	Aqueous	•	PFAS by ID	2.0	I	ng/L	53
021	FS1-FD-20220216-01	Aqueous		PFAS by ID	11		ng/L	53
021	FS1-FD-20220216-01	Aqueous	PFPeA	PFAS by ID	6.8		ng/L	53

Detection Summary (Continued)

Lot Number: XB18038

Sample Sample ID	Matrix Parameter	Method	Result	Q	Units	Page

(137 detections)

Client: Tetra Tech

Description: FS1-DPT0006-005.0-20220216

Project Name: KSC-FS1

Matrix: Aqueous

Laboratory ID: XB18038-001

Date Sampled:02/16/2022 0810

Date Received: 02/18/2022 Project Number: 112G09581

> Analysis Date Analyst Prep Date Batch

Run Prep Method Analytical Method Dilution 1 SOP SPE PFAS by ID SOP QSM B-15 5 03/17/2022 1218 MMM 03/08/2022 1620 34124 2 SOP SPE PFAS by ID SOP QSM B-15 1 03/15/2022 1428 MMM 03/08/2022 1620 34124

Parameter	CAS Number	Analytical Method	l Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SO	P 6.5	UQ	13	6.5	3.4	ng/L	2
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SO	P 6.5	UQ	13	6.5	3.4	ng/L	2
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SO	P 6.5	U	13	6.5	3.4	ng/L	2
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SC	OP 6.2	1	13	6.5	3.4	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SO	P 6.5	U	13	6.5	3.4	ng/L	2
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SO	P 6.5	UQ	13	6.5	3.4	ng/L	2
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SO	P 6.5	U	13	6.5	3.4	ng/L	2
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SO	P 6.5	U	13	6.5	3.4	ng/L	2
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SO	P 6.5	U	13	6.5	3.4	ng/L	2
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SO	P 6.5	U	13	6.5	3.4	ng/L	2
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SC	OP 5.8	1	6.7	3.4	1.7	ng/L	2
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SO)P 3.4	UQ	6.7	3.4	1.7	ng/L	2
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SC	OP 31		6.7	3.4	1.7	ng/L	2
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SO	OP 1.8	IQ	6.7	3.4	1.7	ng/L	2
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SC	OP 11		6.7	3.4	1.7	ng/L	2
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SC	OP 360		6.7	3.4	1.7	ng/L	2
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SC	OP 76	Q	6.7	3.4	1.7	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SC	OP 6.2	1	6.7	3.4	1.7	ng/L	2
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SO)P 3.4	U	6.7	3.4	1.7	ng/L	2
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SC			6.7	3.4	1.7	ng/L	2
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SC	OP 110		6.7	3.4	1.7	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SO	OP 110	Q	6.7	3.4	1.7	ng/L	2
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SC	OP 110	Q	6.7	3.4	1.7	ng/L	2
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SO	OP 130		6.7	3.4	1.7	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SO	P 3.4	UQ	6.7	3.4	1.7	ng/L	2
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SO	P 3.4	U	6.7	3.4	1.7	ng/L	2
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SO	P 3.4	U	6.7	3.4	1.7	ng/L	2
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SC	OP 1800	D	34	17	8.4	ng/L	1
		ptance		ceptance					
		mits Q %)-150	6 Recovery 84	Limits 50-150					
13C2_6:2FTS)-150	52	50-150					
13C2_8:2FTS)-150	59	50-150					
13C2 PFDoA)-150	51	50-150					
13C2 PFTeDA)-150)-150 N	47	50-150					
13C3_PFBS)-150 N)-150	50	50-150					
13C3_PFHxS)-150)-150	50	50-150					
)-150)-150 N	48	50-150					
13C3-HFPO-DA 13C4_PFBA)-150 N)-150 N	48 35	50-150					
13C4_PFHpA)-150 N)-150	51	50-150					
13C5_PFHxA)-150)-150	51	50-150					
13C5_PFPeA)-150)-150	51	50-150					
13C6_PFDA)-150)-150	53	50-150					
1300_110A	,5 50	, 130	55	30-130					

LOQ = Limit of Quantitation V = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit Q = Surrogate failure U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and \geq DL L = LCS/LCSD failure LOD = Limit of Detection D = Dilution > 1 S = MS/MSD failure W = Reported on wet weight basis Q = Out of holding time

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0006-005.0-20220216

Project Name: KSC-FS1

Date Sampled:02/16/2022 0810

Laboratory ID: XB18038-001 Matrix: Aqueous

Date Received: 02/18/2022 Project Number: 112G09581

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 A % Recovery	Acceptance Limits
13C7_PFUdA		89	50-150		50	50-150
13C8_PFOA		86	50-150	Ν	46	50-150
13C8_PFOS		94	50-150	Ν	47	50-150
13C9_PFNA		93	50-150	Ν	47	50-150
d-EtFOSA		96	50-150		58	50-150
d5-EtFOSAA		101	50-150		61	50-150
d3-MeFOSAA		87	50-150		51	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: XB18038-002 Matrix: Aqueous

Date Sampled:02/16/2022 0830 Project Name: KSC-FS1

Date Received: 02/18/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch 1 SOP SPE PFAS by ID SOP QSM B-15 1 03/12/2022 2231 ASD 03/08/2022 1620 34124 2 SOP SPE PFAS by ID SOP QSM B-15 100 03/08/2022 1620 34124 03/13/2022 1230 MMM

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	20000	D	720	360	180	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	88		7.2	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2700	D	360	180	90	ng/L	2
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	4400	D	360	180	90	ng/L	2
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	3300	D	360	180	90	ng/L	2
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	27000	D	360	180	90	ng/L	2
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1000	D	360	180	90	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1700	D	360	180	90	ng/L	2
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	4100	D	360	180	90	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	490		3.6	1.8	0.90	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	6200	D	360	180	90	ng/L	2
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	3100	D	360	180	90	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	27000	D	360	180	90	ng/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 A % Recovery	cceptance Limits	
13C2_4:2FTS		112	50-150		126	50-150	
13C2_6:2FTS		79	50-150		101	50-150	
13C2_8:2FTS		80	50-150		115	50-150	
13C2_PFDoA		61	50-150		108	50-150	
13C2_PFTeDA		50	50-150		109	50-150	
13C3_PFBS		59	50-150		114	50-150	
13C3_PFHxS	N	29	50-150		114	50-150	
13C3-HFPO-DA		74	50-150		109	50-150	
13C4_PFBA	N	49	50-150		112	50-150	
13C4_PFHpA	N	38	50-150		108	50-150	
13C5_PFHxA		58	50-150		108	50-150	
13C5_PFPeA		60	50-150		105	50-150	
13C6_PFDA		73	50-150		99	50-150	

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

Client: Tetra Tech

Description: FS1-DPT0006-012.0-20220216

to Sampled:03/14/2022 0200

Date Sampled:02/16/2022 0830 Project Name: KSC-FS1
Date Received: 02/18/2022 Project Number: 112G09581

Laboratory ID: XB18038-002

Matrix: Aqueous

Surrogate Q	Run 1 % Recovery	Acceptance y Limits C		Acceptance Limits
13C7_PFUdA	66	50-150	108	50-150
13C8_PFOA N	46	50-150	113	50-150
13C8_PFOS	56	50-150	110	50-150
13C9_PFNA	54	50-150	106	50-150
d-EtFOSA	54	50-150	107	50-150
d5-EtFOSAA	66	50-150	112	50-150
d3-MeFOSAA	59	50-150	109	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0006-017.0-20220216

Duals at Name - KCO FC1

Date Sampled:02/16/2022 0850 Project Name: KSC-FS1

Date Received: 02/18/2022 Project Number: 112G0958

Matrix: Aqueous

Laboratory ID: XB18038-003

Date Received: 02/18/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch 1 SOP SPE PFAS by ID SOP QSM B-15 1 03/12/2022 2242 ASD 03/08/2022 1620 34124 2 SOP SPE PFAS by ID SOP QSM B-15 500 03/13/2022 1241 MMM 03/08/2022 1620 34124

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	95000	D	3600	1800	900	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3800	D	3600	1800	900	ng/L	2
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	7000	D	1800	900	450	ng/L	2
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2000	D	1800	900	450	ng/L	2
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	9000	D	1800	900	450	ng/L	2
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	100000	D	1800	900	450	ng/L	2
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	4200	D	1800	900	450	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	10000	D	1800	900	450	ng/L	2
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	21000	D	1800	900	450	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	96		3.6	1.8	0.90	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	12000	D	1800	900	450	ng/L	2
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	15000	D	1800	900	450	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	UQ	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	25000	D	1800	900	450	ng/L	2

Surrogate	Q 9	Run I <i>F</i> % Recovery	Limits Q	% Recovery	cceptance Limits	
13C2_4:2FTS		68	50-150	121	50-150	
13C2_6:2FTS		108	50-150	101	50-150	
13C2_8:2FTS		62	50-150	117	50-150	
13C2_PFDoA		53	50-150	109	50-150	
13C2_PFTeDA	N	41	50-150	112	50-150	
13C3_PFBS	N	43	50-150	114	50-150	
13C3_PFHxS	N	14	50-150	111	50-150	
13C3-HFPO-DA		66	50-150	110	50-150	
13C4_PFBA	N	38	50-150	113	50-150	
13C4_PFHpA	N	21	50-150	110	50-150	
13C5_PFHxA	N	35	50-150	108	50-150	
13C5_PFPeA	N	36	50-150	105	50-150	
13C6_PFDA		58	50-150	98	50-150	

Accontance

Dun 2

Accontanco

Dun 1

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0006-017.0-20220216

Date Sampled:02/16/2022 0850 Date Received: 02/18/2022

Project Name: KSC-FS1

Laboratory ID: XB18038-003 Matrix: Aqueous

Project Number: 112G09581

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Run 2 Q % Recove	Acceptance ery Limits
13C7_PFUdA		51	50-150	111	50-150
13C8_PFOA	Ν	32	50-150	113	50-150
13C8_PFOS		55	50-150	105	50-150
13C9_PFNA		52	50-150	110	50-150
d-EtFOSA	Ν	44	50-150	93	50-150
d5-EtFOSAA		55	50-150	115	50-150
d3-MeFOSAA		51	50-150	103	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Laboratory ID: XB18038-004 Matrix: Aqueous

Description: FS1-DPT0006-025.0-20220216

Project Name: KSC-FS1

Date Received: 02/18/2022

Date Sampled:02/16/2022 0915

Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch 1 SOP SPE PFAS by ID SOP QSM B-15 03/12/2022 2314 MMM 03/08/2022 1620 34124 2 SOP SPE PFAS by ID SOP QSM B-15 03/08/2022 1620 34124 50 03/13/2022 1251 MMM

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	22000	D	350	180	87	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3100	D	350	180	87	ng/L	2
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.5	UQ	6.9	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2100	D	170	85	43	ng/L	2
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	42	Q	3.5	1.8	0.87	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2400	D	170	85	43	ng/L	2
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	18000	D	170	85	43	ng/L	2
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	2300	D	170	85	43	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2300	D	170	85	43	ng/L	2
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	9300	D	170	85	43	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	830	D	170	85	43	ng/L	2
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	9100	D	170	85	43	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	49		3.5	1.8	0.87	ng/L	1

Surrogate	Q	% Recovery	Limits Q		Limits	
13C2_4:2FTS		118	50-150	129	50-150	
13C2_6:2FTS		117	50-150	105	50-150	
13C2_8:2FTS		103	50-150	119	50-150	
13C2_PFDoA		66	50-150	109	50-150	
13C2_PFTeDA		50	50-150	105	50-150	
13C3_PFBS	Ν	49	50-150	112	50-150	
13C3_PFHxS	Ν	41	50-150	107	50-150	
13C3-HFPO-DA		58	50-150	109	50-150	
13C4_PFBA	Ν	22	50-150	110	50-150	
13C4_PFHpA	Ν	46	50-150	109	50-150	
13C5_PFHxA	Ν	46	50-150	107	50-150	
13C5_PFPeA	Ν	37	50-150	105	50-150	
13C6_PFDA		80	50-150	103	50-150	

Accontanco

Dun 2

Accontanco

Dun 1

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0006-025.0-20220216

Project Name: KSC-FS

Date Sampled:02/16/2022 0915 Date Received: 02/18/2022 Project Name: KSC-FS1
Project Number: 112G09581

Laboratory ID: XB18038-004 Matrix: Aqueous

13C7_PFUdA 71 50-150 105 50-150
13C8_PFOA 66 50-150 115 50-150
13C8_PFOS 82 50-150 114 50-150
13C9_PFNA 80 50-150 109 50-150
d-EtFOSA 56 50-150 107 50-150
d5-EtFOSAA 78 50-150 113 50-150
d3-MeFOSAA 71 50-150 110 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ \geq DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB18038-005

Description: FS1-DPT0006-035.0-20220216

Date Sampled:02/16/2022 0940 Project Name: KSC-FS1

Date Received: 02/18/2022 Project Number: 112G09581

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 10 03/13/2022 1302 MMM 03/08/2022 1620 34124

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	37	U	73	37	18	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3) 763051-92-9	PFAS by ID SOP	37	U	73	37	18	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	37	U	73	37	18	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	160	D	73	37	18	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	37	U	73	37	18	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	37	U	73	37	18	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	37	U	73	37	18	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	37	U	73	37	18	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	37	U	73	37	18	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	37	U	73	37	18	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	550	D	36	18	9.1	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	18	U	36	18	9.1	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	28	ID	36	18	9.1	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	18	U	36	18	9.1	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	490	D	36	18	9.1	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	3800	D	36	18	9.1	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	110	D	36	18	9.1	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	18	U	36	18	9.1	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	18	U	36	18	9.1	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	180	D	36	18	9.1	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	810	D	36	18	9.1	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	18	U	36	18	9.1	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	690	D	36	18	9.1	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	230	D	36	18	9.1	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	18	U	36	18	9.1	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	18	U	36	18	9.1	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	18	U	36	18	9.1	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	99	D	36	18	9.1	ng/L	1
F	Run 1 Accep	otance							
		nits							
13C2_4:2FTS		-150							
13C2_6:2FTS		-150							
13C2_8:2FTS		-150							
13C2_PFDoA		-150							
13C2_PFTeDA		-150							
13C3_PFBS		-150							
13C3_PFHxS		-150							
13C3-HFPO-DA		-150							
13C4_PFBA		-150							
13C4_PFHpA		-150							
13C5_PFHxA		-150							
13C5_PFPeA	108 50	-150							

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \ge DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C6_PFDA

13C7_PFUdA

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

98

101

Client: Tetra Tech

Description: FS1-DPT0006-035.0-20220216

Project Name: KSC-FS1

Project Number: 112G09581

Date Sampled:02/16/2022 0940 Date Received: 02/18/2022

Surrogate	Run 1 Ac Q % Recovery	Acceptance Limits
13C8_PFOA	113	50-150
13C8_PFOS	113	50-150
13C9_PFNA	108	50-150
d-EtFOSA	101	50-150
d5-EtFOSAA	109	50-150
d3-MeFOSAA	105	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Laboratory ID: XB18038-005

Matrix: Aqueous

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0006-045.0-20220216

Project Name: KSC-FS1

Laboratory ID: XB18038-006 Matrix: Aqueous

Date Sampled:02/16/2022 1010

Project Number: 112G09581

1

Run Prep Method SOP SPE 1

2

Date Received: 02/18/2022

SOP SPE

Analytical Method Dilution PFAS by ID SOP QSM B-15 PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/12/2022 1816 ASD 03/15/2022 1337 ASD

Prep Date Batch 03/09/2022 1157 34241 03/14/2022 1626 34774

CAS Analytical Parameter Number Method Result Q LOQ LOD DL Units Run 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS) 756426-58-1 PFAS by ID SOP 3.6 7 2 3.6 1.8 ng/L PFAS by ID SOP U 7 2 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...) 763051-92-9 3.6 3.6 ng/L 1 1.8 1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS) 39108-34-4 PFAS by ID SOP 3.6 U 7.2 ng/L 1 3.6 1.8 1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS) 27619-97-2 PFAS by ID SOP 2.6 IQ 7.2 ng/L 2 3.6 1.8 1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS) 757124-72-4 PFAS by ID SOP UQ 7.2 3.6 ng/L 1 3.6 1.8 Hexafluoropropylene oxide dimer acid (GenX) 13252-13-6 PFAS by ID SOP 3.6 U 7 2 3.6 1.8 ng/L 4,8-dioxa-3H-perfluorononanoic acid (ADONA) 919005-14-4 PFAS by ID SOP 3.6 U 7 2 1.8 ng/L 1 3.6 N-ethylperfluoro-1-octanesulfonamide (EtFOSA) 4151-50-2 PFAS by ID SOP UQ 7.2 3.6 3.6 1.8 ng/L N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA) 2991-50-6 PFAS by ID SOP 3.6 U 7 2 1.8 ng/L 3.6 N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA) PFAS by ID SOP 2355-31-9 3.6 U 7.2 1.8 ng/L 1 3.6 Perfluoro-1-butanesulfonic acid (PFBS) 375-73-5 PFAS by ID SOP 18 U 3.6 1.8 0.90ng/L 1 Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 1.8 U 3.6 0.90 ng/L 18 Perfluoro-1-heptanesulfonic acid (PFHpS) PFAS by ID SOP 375-92-8 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 2706-91-4 Perfluoro-1-pentanesulfonic acid (PFPeS) PFAS by ID SOP 18 U ng/L 1 3.6 1.8 0.90 PFAS by ID SOP Perfluorohexanesulfonic acid (PFHxS) 355-46-4 3.9 3.6 1.8 0.90 ng/L Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-dodecanoic acid (PFDoA) 307-55-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 1.8 U 3.6 1.8 ng/L 0.90Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 18 U ng/L 1 3.6 1.8 0.90 Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 1.8 3.6 1.8 0.90 ng/L Perfluoro-n-tetradecanoic acid (PFTeDA) U 376-06-7 PFAS by ID SOP 1.8 3.6 1.8 0.90 ng/L Perfluoro-n-tridecanoic acid (PFTrDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 ng/L 1 0.90Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 6.8 3.6 ng/L 1 1.8 0.90 Run 1 Acceptance Run 2 Acceptance Surrogate % Recovery % Recovery Limits Limits

13C2_4:2FTS	N	213	50-150	N	207	50-150
13C2_6:2FTS	N	230	50-150	N	164	50-150
13C2_8:2FTS		110	50-150		101	50-150
13C2_PFDoA		82	50-150		82	50-150
13C2_PFTeDA		55	50-150		72	50-150
13C3_PFBS		81	50-150		89	50-150
13C3_PFHxS		88	50-150		93	50-150
13C3-HFPO-DA		82	50-150		83	50-150
13C4_PFBA		57	50-150		56	50-150
13C4_PFHpA		82	50-150		89	50-150
13C5_PFHxA		89	50-150		91	50-150
13C5_PFPeA		82	50-150		84	50-150
13C6_PFDA		89	50-150		91	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis DL = Detection Limit I = Estimated result < LOQ and ≥ DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

Client: Tetra Tech

Description: FS1-DPT0006-045.0-20220216

Project Name: KSC-FS1

Date Sampled:02/16/2022 1010 Date Received: 02/18/2022

Project Number: 112G09581

Laboratory ID: XB18038-006 Matrix: Aqueous

13C7_PFUdA 84 50-150 92 50-150 13C8_PFOA 100 50-150 96 50-150 13C8_PFOS 93 50-150 93 50-150 13C9_PFNA 95 50-150 90 50-150 d-EtFOSA N 23 50-150 73 50-150
13C8_PFOS 93 50-150 93 50-150 13C9_PFNA 95 50-150 90 50-150 d-EtFOSA N 23 50-150 73 50-150
13C9_PFNA 95 50-150 90 50-150 d-EtFOSA N 23 50-150 73 50-150
d-EtFOSA N 23 50-150 73 50-150
d5-EtFOSAA 88 50-150 51 50-150
d3-MeFOSAA 85 50-150 90 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1 Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0007-005.0-20220216

Project Name: KSC-FS1

Laboratory ID: XB18038-007 Matrix: Aqueous

Date Sampled:02/16/2022 1120 Date Received: 02/18/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch 1 SOP SPE PFAS by ID SOP QSM B-15 03/12/2022 1827 ASD 03/09/2022 1157 34241 2 SOP SPE PFAS by ID SOP QSM B-15 1 03/15/2022 1348 ASD 03/14/2022 1626 34774

Parameter	CAS Number	Analytica Method		: Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SC	DP 40	U	80	40	20	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3) 763051-92-9	PFAS by ID SC	OP 40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SC	OP 40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SC	OP 40	U	80	40	20	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SC	OP 40	U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SC	OP 40	U	80	40	20	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SC	OP 40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SC	OP 40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SC	OP 40	U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SC	OP 40	U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID S	OP 48		40	20	10	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID S	OP 10	1	40	20	10	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SC	OP 20	U	40	20	10	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SC		U	40	20	10	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID S			40	20	10	ng/L	1
						20	10	3	
Surrogate Q % Re		ptance mits Q 9	Run 2 A Recovery	cceptance Limits	9				
13C2_4:2FTS)-150	119	50-150					
13C2_6:2FTS	114 50)-150	96	50-150					
13C2_8:2FTS	121 50)-150	94	50-150					
13C2_PFDoA	107 50)-150	86	50-150					
13C2_PFTeDA	79 50)-150	76	50-150					
13C3_PFBS	110 50	0-150	103	50-150					
13C3_PFHxS		0-150	100	50-150					
13C3-HFPO-DA		0-150	99	50-150					
13C4_PFBA		D-150	97	50-150					
13C4_PFHpA		0-150	99	50-150					
13C5_PFHxA		0-150	98	50-150					
13C5_PFPeA		0-150	101	50-150					
- ·									

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13C6_PFDA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

114

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

97

50-150

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-DPT0007-005.0-20220216

Project Name: KSC ES

94

Date Sampled:02/16/2022 1120 Date Received: 02/18/2022

Surrogate
13C7_PFUdA
13C8_PFOA
13C8_PFOS
13C9_PFNA
d-EtFOSA
d5-EtFOSAA
d3-MeFOSAA

Project Name: KSC-FS1
Project Number: 112G09581

50-150

Laboratory ID: XB18038-007 Matrix: Aqueous

Q	Run 1 / % Recovery	Acceptance Limits	Q	Run 2 A % Recovery	cceptance Limits
	109	50-150		98	50-150
	117	50-150		101	50-150
	112	50-150		102	50-150
	109	50-150		98	50-150
	85	50-150		71	50-150
	109	50-150		95	50-150

91

50-150

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \ge DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

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Client: Tetra Tech

Description: FS1-DPT0007-012.0-20220216

Project Name: KSC-FS1

Laboratory ID: XB18038-008 Matrix: Aqueous

Date Sampled:02/16/2022 1140

Project Number: 112G09581

Run Prep Method 1 SOP SPE

Date Received: 02/18/2022

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/12/2022 1838 ASD

Prep Date 03/09/2022 1157 34241

Batch

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	40	U	80	40	20	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	40	UL	80	40	20	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	14	1	40	20	10	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	17	1	40	20	10	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	79		40	20	10	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Surrogate Q % Rec	un 1 Accer covery Lir	otance nits		_		20	10		
_		-150							
13C2_6:2FTS		-150							
_		-150							
13C2_PFDoA		-150							
13C2_PFTeDA		-150							
13C3_PFBS		-150							
-		-150							
13C3-HFPO-DA	88 50	-150							
13C4_PFBA		-150							
13C4_PFHpA	76 50	-150							
13C5_PFHxA	82 50	-150							

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13C5_PFPeA 13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

83

91

79

50-150

50-150

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Description: FS1-DPT0007-012.0-20220216

Date Sampled:02/16/2022 1140

Date Received: 02/18/2022

Laboratory ID: XB18038-008

Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

13C8_PFOA 92 50-150 13C8_PFOS 88 50-150	
12C0 DEOS 90 50.150	
1306_F1 03 66 50-130	
13C9_PFNA 80 50-150	
d-EtFOSA 76 50-150	
d5-EtFOSAA 78 50-150	
d3-MeFOSAA 72 50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Laboratory ID: XB18038-009 Client: Tetra Tech

Description: FS1-DPT0007-017.0-20220216

Date Sampled:02/16/2022 1200 Project Name: KSC-FS1 Date Received: 02/18/2022 Project Number: 112G09581

Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/12/2022 1848 ASD	03/09/2022 1157 34241

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	40	U	80	40	20	ng/L	1
$\hbox{11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)}\\$	763051-92-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	40	UL	80	40	20	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	2 PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	19	1	40	20	10	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	21	Ī	40	20	10	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	100		40	20	10	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	20	U	40	20		ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	,	20	U	40		10		1
Perfluoro-n-octanoic acid (PFOA)	375-95-1	PFAS by ID SOP PFAS by ID SOP	20	U	40	20	10	ng/L ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	20	U	40	20	10	-	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	20	U	40	20	10	ng/L	1
	72629-94-8	•		U		20	10	ng/L	
Perfluoro-n-tridecanoic acid (PFTrDA)		PFAS by ID SOP	20		40	20	10	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Surrogate RL Q % Rec		otance mits							
13C2_4:2FTS 1	118 50	-150							
13C2_6:2FTS	106 50	-150							
13C2_8:2FTS	102 50	-150							
13C2_PFDoA	96 50	-150							
13C2_PFTeDA	85 50	-150							
13C3_PFBS	90 50	-150							
13C3_PFHxS	96 50	-150							
13C3-HFPO-DA	96 50	-150							
13C4_PFBA	98 50	-150							
13C4_PFHpA	99 50	-150							
13C5_PFHxA 1	101 50	-150							
13C5_PFPeA	96 50	-150							
		-150							
		-150							
OQ = Limit of Quantitation V = Detected in the method blank	E = Quantitation	of compound exceeded th	e calibration r	ange	DL = Detection Limit	:	Q	= Surrogat	e failur
= Not detected at or above the LOQ N = Recovery is out of criteria 2 = Out of holding time W = Reported on wet weight basis	P = The RPD bet LOD = Limit of De	ween two GC columns ex	ceeds 40%		I = Estimated result < LOQ and > DL D = Dilution > 1			= LCS/LCS = MS/MSD	

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0007-017.0-20220216

Date Sampled:02/16/2022 1200

Date Received: 02/18/2022

Droject Name: KSC ES1

Laboratory ID: XB18038-009 Matrix: Aqueous

Project Name: KSC-FS1
Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	cceptance Limits	
13C8_PFOA	101	50-150	
13C8_PFOS	100	50-150	
13C9_PFNA	97	50-150	
d-EtFOSA	86	50-150	
d5-EtFOSAA	97	50-150	
d3-MeFOSAA	90	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1 Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0007-025.0-20220216

Date Sampled:02/16/2022 1225 Project Name: KSC-FS1 Date Received: 02/18/2022 Project Number: 112G09581 Laboratory ID: XB18038-010

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch SOP SPE PFAS by ID SOP QSM B-15 03/12/2022 2335 ASD 03/08/2022 1620 34124

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3) 763051-92-9	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.5	UQ	6.9	3.5	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	76	S	3.4	1.7	0.86	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	43		3.4	1.7	0.86	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	29	S	3.4	1.7	0.86	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	4.1	Q	3.4	1.7	0.86	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.0	I	3.4	1.7	0.86	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	10		3.4	1.7	0.86	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	6.2		3.4	1.7	0.86	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.5	1	3.4	1.7	0.86	ng/L	1
Surrogate Q % Re		ptance mits							
13C2_4:2FTS N)-150							
13C2_6:2FTS)-150							
13C2_8:2FTS	93 50)-150							
13C2_PFDoA	77 50)-150							
13C2_PFTeDA	63 50)-150							
13C3_PFBS	79 50)-150							
13C3_PFHxS	99 50)-150							
13C3-HFPO-DA	87 50)-150							
13C4_PFBA N	45 50)-150							
13C4_PFHpA	87 50)-150							

LOQ = Limit of Quantitation V = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit Q = Surrogate failure U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and \geq DL L = LCS/LCSD failure LOD = Limit of Detection D = Dilution > 1 S = MS/MSD failure W = Reported on wet weight basis Q = Out of holding time

50-150

50-150

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

13C7_PFUdA

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89

75

92

86

Client: Tetra Tech

Description: FS1-DPT0007-025.0-20220216

Project Name: KSC-FS1

Date Sampled:02/16/2022 1225 Date Received:02/18/2022

Project Number: 112G09581

Laboratory ID: XB18038-010 Matrix: Aqueous

Surrogate	Run 1 A 2 % Recovery	cceptance Limits
13C8_PFOA	93	50-150
13C8_PFOS	99	50-150
13C9_PFNA	87	50-150
d-EtFOSA	61	50-150
d5-EtFOSAA	90	50-150
d3-MeFOSAA	80	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ \geq DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0007-035.0-20220216

Date Sampled:02/16/2022 1250 Project Name: KSC-FS1 Laboratory ID: XB18038-011 Matrix: Aqueous

Date Received: 02/18/2022 Project Number: 112G09581

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/12/2022 1920 ASD	03/09/2022 1157	34241
2	SOP SPE	PFAS by ID SOP QSM B-15	100	03/17/2022 1229 MMM	03/09/2022 1157	34241
4	SOP SPE	PFAS by ID SOP QSM B-15	100	03/16/2022 1846 NK1	03/14/2022 1626	34774

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	7500	D	710	360	180	ng/L	4
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	530	ID	720	360	180	ng/L	2
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	4300	D	360	180	91	ng/L	2
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	240	Q	3.6	1.8	0.91	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	3300	D	360	180	91	ng/L	2
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	15000	D	360	180	91	ng/L	2
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	830	D	360	180	91	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	650	D	360	180	91	ng/L	2
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	4600	D	360	180	91	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	510	D	360	180	91	ng/L	2
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1900	D	360	180	91	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	UQ	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	94		3.6	1.8	0.91	ng/L	1

			Acceptance			cceptance			Acceptance
Surrogate	Q 9	6 Recovery	Limits	Q	% Recovery	Limits	Q	% Recovery	Limits
13C2_4:2FTS		116	50-150		99	50-150		98	50-150
13C2_6:2FTS		108	50-150		90	50-150		97	50-150
13C2_8:2FTS		93	50-150		91	50-150		114	50-150
13C2_PFDoA		70	50-150		108	50-150		95	50-150
13C2_PFTeDA	N	36	50-150		105	50-150		99	50-150
13C3_PFBS		86	50-150		100	50-150		96	50-150
13C3_PFHxS	N	41	50-150		95	50-150		94	50-150
13C3-HFPO-DA		81	50-150		103	50-150		92	50-150
13C4_PFBA	N	46	50-150		100	50-150		102	50-150
13C4_PFHpA	N	48	50-150		106	50-150		91	50-150
13C5_PFHxA		54	50-150		94	50-150		98	50-150
13C5_PFPeA		62	50-150		97	50-150		92	50-150

LOQ = Limit of Quantitation V = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit Q = Surrogate failure U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and \geq DL L = LCS/LCSD failure Q = Out of holding time D = Dilution > 1 S = MS/MSD failure W = Reported on wet weight basis LOD = Limit of Detection

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0007-035.0-20220216

Date Sampled:02/16/2022 1250 Project Name: KSC-FS1 Laboratory ID: XB18038-011

Matrix: Aqueous

Date Received: 02/18/2022

Project Number: 112G09581

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 A % Recovery	cceptance Limits	Q	Run 4 % Recovery	Acceptance Limits
13C6_PFDA		86	50-150		99	50-150		94	50-150
13C7_PFUdA		77	50-150		94	50-150		94	50-150
13C8_PFOA		81	50-150		93	50-150		104	50-150
13C8_PFOS		87	50-150		105	50-150		102	50-150
13C9_PFNA		87	50-150		104	50-150		105	50-150
d-EtFOSA	Ν	14	50-150		107	50-150		85	50-150
d5-EtFOSAA		86	50-150		103	50-150		96	50-150
d3-MeFOSAA		77	50-150		91	50-150		94	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0007-045.0-20220216

Project Name: KSC-FS1

Laboratory ID: XB18038-012 Matrix: Aqueous

Date Sampled:02/16/2022 1315 Date Received: 02/18/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch 1 SOP SPE PFAS by ID SOP QSM B-15 1 03/13/2022 1209 MMM 03/09/2022 1157 34241 2 SOP SPE PFAS by ID SOP QSM B-15 1 03/15/2022 1410 ASD 03/14/2022 1626 34774

Parameter	CAS Number	Analytic Metho		: Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ON	NS) 756426-58-1	PFAS by ID S	SOP 3.6	U	7.1	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF	3) 763051-92-9	PFAS by ID S	SOP 3.6	U	7.1	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID S	SOP 3.6	U	7.1	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID	SOP 1.9	IQ	6.9	3.5	1.7	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID S	SOP 3.6	UQ	7.1	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID S	SOP 3.6	U	7.1	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID S	SOP 3.6	U	7.1	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID S	SOP 3.6	UQ	7.1	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID S	SOP 3.6	U	7.1	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA) 2355-31-9	PFAS by ID S	SOP 3.6	U	7.1	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID	SOP 2.4	1	3.5	1.8	0.89	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID S	SOP 1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID	SOP 0.89	1	3.5	1.8	0.89	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID S	SOP 1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID	SOP 2.8	1	3.5	1.8	0.89	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID	SOP 12		3.5	1.8	0.89	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID	SOP 1.1	1	3.5	1.8	0.89	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID S	SOP 1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID S	SOP 1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID	SOP 1.9	1	3.5	1.8	0.89	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID	SOP 4.1		3.5	1.8	0.89	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID S	SOP 1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID	SOP 28		3.5	1.8	0.89	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID	SOP 1.6	1	3.5	1.8	0.89	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID S	SOP 1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID S	SOP 1.8	U	3.5	1.8	0.89	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID S	SOP 1.8	U	3.5	1.8	0.89	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID	SOP 7.6		3.5	1.8	0.89	ng/L	1
Surrogate Q %		eptance imits Q	Run 2 A	cceptanc Limits	e				
13C2_4:2FTS N		0-150 N	210	50-150					
13C2_6:2FTS N	219 5	0-150 N	182	50-150					
13C2_8:2FTS	132 5	0-150	111	50-150					
13C2_PFDoA	86 5	0-150	83	50-150					
13C2_PFTeDA	60 5	0-150	75	50-150					
13C3_PFBS	84 5	0-150	87	50-150					
13C3_PFHxS	96 5	0-150	95	50-150					
13C3-HFPO-DA	82 5	0-150	87	50-150					
13C4_PFBA	54 5	0-150	54	50-150					
13C4_PFHpA	99 5	0-150	97	50-150					

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L = LCS/LCSD failure
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S = MS/MSD failure

96

81

50-150

50-150

50-150

50-150

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

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90

81

101

Client: Tetra Tech

Description: FS1-DPT0007-045.0-20220216

Project Name: KSC-FS1

Date Sampled:02/16/2022 1315

Date Received: 02/18/2022

Project Number: 112G09581

Laboratory ID: XB18038-012 Matrix: Aqueous

Surrogate	Q	Run 1 % Recovery	Acceptance Limits Q	Run 2 A % Recovery	cceptance Limits
13C7_PFUdA		90	50-150	95	50-150
13C8_PFOA		105	50-150	101	50-150
13C8_PFOS		92	50-150	102	50-150
13C9_PFNA		102	50-150	95	50-150
d-EtFOSA	Ν	34	50-150	63	50-150
d5-EtFOSAA		98	50-150	101	50-150
d3-MeFOSAA		93	50-150	94	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Laboratory ID: XB18038-013 Client: Tetra Tech

Description: FS1-EB-20220216-01

Date Sampled:02/16/2022 1400 Project Name: KSC-FS1 Date Received: 02/18/2022 Project Number: 112G09581 Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/12/2022 1941 ASD	03/09/2022 1157 34241

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Ru
P-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS	5) 756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3.) 763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
IH, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
IH, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	UL	7.2	3.6	1.8	ng/L	1
H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8		-	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90 0.90	ng/L ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8		ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6		0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	-	
, ,			1.8	U	3.0	1.8	0.90	ng/L	1
Surrogate Q % F		ptance mits							
3C2_4:2FTS	104 50)-150							
13C2_6:2FTS	103 50)-150							
3C2_8:2FTS	91 50)-150							
3C2_PFDoA	92 50)-150							
3C2_PFTeDA	84 50)-150							
3C3_PFBS	90 50)-150							
I3C3_PFHxS	85 50)-150							
I3C3-HFPO-DA	94 50)-150							
3C4_PFBA	94 50)-150							
I3C4_PFHpA)-150							
3C5_PFHxA)-150							
13C5_PFPeA)-150							
13C6_PFDA)-150							
13C7 PFUdA)-150							
557_1 1 54A	/2 50	, 100							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Q = Out of holding time

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W = Reported on wet weight basis

LOD = Limit of Detection

D = Dilution > 1

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-EB-20220216-01

Laboratory ID: XB18038-013 Matrix: Aqueous

Date Sampled:02/16/2022 1400

Project Name: KSC-FS1

Date Received: 02/18/2022

Project Number: 112G09581

Surrogate	Run 1 Ac Q % Recovery	Acceptance Limits
13C8_PFOA	102	50-150
13C8_PFOS	91	50-150
13C9_PFNA	91	50-150
d-EtFOSA	86	50-150
d5-EtFOSAA	101	50-150
d3-MeFOSAA	93	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0008-005.0-20220216

Date Sampled:02/16/2022 1445 Project Name: KSC-FS1 Date Received: 02/18/2022 Project Number: 112G09581 Laboratory ID: XB18038-014

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch SOP SPE PFAS by ID SOP QSM B-15 03/12/2022 1952 ASD 03/09/2022 1157 34241

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Rur
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	40	U	80	40	20	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	40	UL	80	40	20	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP		ī	40	20	10	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	17	i	40	20	10	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	20	U	40	20		-	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	,	20	U	40		10	ng/L	
Perfluoro-n-octanoic acid (PFOA)	375-95-1	PFAS by ID SOP PFAS by ID SOP	20	U	40	20 20	10	ng/L ng/L	1 1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	20	U	40		10		1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	20	U	40	20	10	ng/L	1
· · · · · · · · · · · · · · · · · · ·		,	20	U		20	10	ng/L	
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP			40	20	10	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
		ptance mits							
13C2_4:2FTS	120 50)-150							
13C2_6:2FTS	116 50)-150							
13C2_8:2FTS	106 50)-150							
13C2_PFDoA	98 50)-150							
13C2_PFTeDA	75 50)-150							
13C3_PFBS	99 50)-150							
	103 50)-150							
13C3-HFPO-DA	99 50)-150							
13C4_PFBA)-150							
13C4_PFHpA)-150							
13C5_PFHxA)-150							
)-150							
)-150							
)-150							
I3C/_PFUUA	100 50	J-15U							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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W = Reported on wet weight basis LOD = Limit of Detection

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Description: FS1-DPT0008-005.0-20220216

Date Sampled:02/16/2022 1445

Date Received: 02/18/2022

Project Name: KSC-FS1

Laboratory ID: XB18038-014 Matrix: Aqueous

Project Number: 112G09581

Surrogate Q % Recovery Limi	S
13C8_PFOA 109 50-1	0
13C8_PFOS 104 50-1	0
13C9_PFNA 106 50-1	0
d-EtFOSA 76 50-1	0
d5-EtFOSAA 108 50-1	0
d3-MeFOSAA 102 50-1	0

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB18038-015

Description: FS1-DPT0008-012.0-20220216

Date Sampled:02/16/2022 1515 Project Name: KSC-FS1 Date Received: 02/18/2022 Project Number: 112G09581

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch SOP SPE PFAS by ID SOP QSM B-15 03/12/2022 2003 ASD 03/09/2022 1157 34241

11-chloroelososafluoro-3 oxaundecaen -1 suffonic acid (11 CI-PF3.)	Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
H. H. H. ZH. ZH-perfluorodecane sulfonic acid (62 PTS)	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	40	U	80	40	20	ng/L	1
11.1.1.1.1.1.2.1.1.2.1.2.1.2.1.2.2.2.2.	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)) 763051-92-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
11-11-11-12-14-2-14-perfluorochexane sulfonic acid (42-FTS) 75-712-4-72-4 FAS by ID SOP 40 U 80 40 20 69/L 11 11-14-14-14-14-14-14-14-14-14-14-14-14-1	1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	40	UL	80	40	20	ng/L	1
4.8-dloxa-3H-perfluorononanoic acid (ADONA) 919005-14-0	1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Nethypherfluoro-1-octanesulfonamida (eIFOSA)	Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Nethyliperfluoro-1-octanesulfonamidoacetic acid (ReFOSA)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS) 375-73-5 PFAS by ID SOP 20 U 40 20 10 ng/L 1	N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-1-heptanesulfonic acid (PFHS) 375-92-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFPS) 2706-91-4 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFPAS) 375-92-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-1-pentanesulfonic acid (PFPAS) 375-92-24 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-decanoic acid (PFDA) 335-62-2 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-decanoic acid (PFDA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-heptanoic acid (PFDA) 375-95-1 PFAS by ID SOP 20	N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 1 1 1 1 1 1 1 1	Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 20 U 40 20 10 ng/L 1 1 1 1 1 1 1 1 1	Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-hudancia cid (PFHxS) 355-46-4 PFAS by ID SOP 13 1 40 20 10 ng/L 1 1 1 1 1 1 1 1 1	Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-beptanoic acid (PFDA) 335-76-3 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-beptanoic acid (PFHA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-beptanoic acid (PFHAA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-beptanoic acid (PFHAA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-beptanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-beptanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-beptanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-beptanoic acid (PFPA) 376-7-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-beptanoic acid (PFPA) 376-7-2 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-beptanoic acid (PFTAA) 76629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tridecanoic acid (PFTAA) 776-29-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tridecanoic acid (PFTAA) 776-29-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tridecanoic acid (PFTAA) 776-29-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tridecanoic acid (PFTAA) 776-29-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tridecanoic acid (PFTAA	Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-dedecanoic acid (PFDA) 307-55-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-hexanoic acid (PFIPA) 307-24-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-hexanoic acid (PFIPA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-conancic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-cotanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-pentancic acid (PFPA) 726-99-48 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-indecanoic acid (PFTDA) 726-99-48 PFAS by ID SOP 20 U	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	13	1	40	20	10	ng/L	1
Perfluoro-n-dodecanoic acid (PFDA) 307-55-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-heptanoic acid (PFHA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-hexanoic acid (PFHA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-ectanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-cictanoic acid (PFOA) 335-6-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-teltradecanoic acid (PFDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tridecanoic acid (PFUA) 726-99-48 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tridecanoic acid (PFUA) 176-3-23-1 PFAS by ID SOP 20 U	Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 20 U 40 20 10 ng/L 1	Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-hexanoic acid (PFHXA) 307-24-4 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-ctanoic acid (PFOA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tetradecanoic acid (PFPAA) 376-67-7 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tetradecanoic acid (PFTeDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUDA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUDA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUDA) 20 20 20 20 <	Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-pentanoic acid (PFPAA) 7706-90-3 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-pentanoic acid (PFPAA) 776-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tridecanoic acid (PFTDA) 776-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tridecanoic acid (PFTDA) 776-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 20 U 60 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 20 U 60 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 20 U 60 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 20 U 60 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 0 20 U 60 ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 0 20 U 60 Ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 0 20 U 60 Ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 40 0 20 U 60 Ng/L 1 Perfluoro-n-undecanoic acid (PFUAA) 786-89-8 PFAS by ID SOP 20 U 60 U	Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tetradecanoic acid (PFTeDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 20 Negative Index 10 <t< td=""><td>Perfluoro-n-hexanoic acid (PFHxA)</td><td>307-24-4</td><td>PFAS by ID SOP</td><td>20</td><td>U</td><td>40</td><td>20</td><td>10</td><td>ng/L</td><td>1</td></t<>	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 20 U 40 20 10 ng/L 1	Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-tridecanoic acid (PFTeDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 1763-23-1 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 20 Na 1763-23-1 PFAS by ID SOP 18 1 40 20 10 ng/L 1 Surrogate 118 50-150 50 50 50 50 50 50 50 50 50 50 50 50 50 50 <td< td=""><td>Perfluoro-n-octanoic acid (PFOA)</td><td>335-67-1</td><td>PFAS by ID SOP</td><td>20</td><td>U</td><td>40</td><td>20</td><td>10</td><td>ng/L</td><td>1</td></td<>	Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA) 72629-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 U 40 20 10 ng/L 1 Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 18 I 40 20 10 ng/L 1 Surrogate Q Run 1 Acceptance Acceptance Surrogate Beach 118 50-150 13C2_4:2FTS 118 50-150 50-150 50-150 50-150 50-150 13C2_PFDOA 84 50-150 50-15	Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 20 10 40 20 10 ng/L 1 1 1 1 1 1 1 1 1	Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Surrogate Q Recovery Limits 13C2_4:2FTS 118 50-150 13C2_6:2FTS 112 50-150 13C2_8:2FTS 94 50-150 13C2_PFDOA 84 50-150 13C2_PFTeDA 71 50-150 13C3_PFBS 92 50-150 13C3_PFHxS 88 50-150 13C3_HFPO-DA 87 50-150 13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150	Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Surrogate Q % Recovery Limits 13C2_4:2FTS 118 50-150 13C2_6:2FTS 112 50-150 13C2_PFDoA 84 50-150 13C2_PFTeDA 71 50-150 13C3_PFBS 92 50-150 13C3_PFHxS 88 50-150 13C3-HFPO-DA 87 50-150 13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	18	1	40	20	10	ng/L	1
13C2_4:2FTS 118 50-150 13C2_6:2FTS 112 50-150 13C2_8:2FTS 94 50-150 13C2_PFDOA 84 50-150 13C2_PFTeDA 71 50-150 13C3_PFBS 92 50-150 13C3_PFHxS 88 50-150 13C3-HFPO-DA 87 50-150 13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150	R Surrogate 0 % Re	un 1 Accep								
13C2_6:2FTS 112 50-150 13C2_8:2FTS 94 50-150 13C2_PFDOA 84 50-150 13C2_PFTeDA 71 50-150 13C3_PFBS 92 50-150 13C3_PFHxS 88 50-150 13C3-HFPO-DA 87 50-150 13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150										
13C2_8:2FTS 94 50-150 13C2_PFDoA 84 50-150 13C2_PFTeDA 71 50-150 13C3_PFBS 92 50-150 13C3_PFHxS 88 50-150 13C3-HFPO-DA 87 50-150 13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150										
13C2_PFDoA 84 50-150 13C2_PFTeDA 71 50-150 13C3_PFBS 92 50-150 13C3_PFHxS 88 50-150 13C3-HFPO-DA 87 50-150 13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150		94 50	-150							
13C2_PFTeDA 71 50-150 13C3_PFBS 92 50-150 13C3_PFHxS 88 50-150 13C3-HFPO-DA 87 50-150 13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150	13C2 PFDoA									
13C3_PFBS 92 50-150 13C3_PFHxS 88 50-150 13C3-HFPO-DA 87 50-150 13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150										
13C3_PFHxS 88 50-150 13C3_HFPO-DA 87 50-150 13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150										
13C3-HFPO-DA 87 50-150 13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150										
13C4_PFBA 94 50-150 13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150										
13C4_PFHpA 91 50-150 13C5_PFHxA 97 50-150										
13C5_PFHxA 97 50-150										
	•									
	13C5_PFPeA									

LOQ = Limit of Quantitation V = Detected in the method blank E = Quantitation of compound exceeded the calibration range DL = Detection Limit Q = Surrogate failure U = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% I = Estimated result < LOQ and \geq DL L = LCS/LCSD failure LOD = Limit of Detection D = Dilution > 1 S = MS/MSD failure W = Reported on wet weight basis Q = Out of holding time

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C6_PFDA

13C7_PFUdA

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100

86

Client: Tetra Tech

Description: FS1-DPT0008-012.0-20220216

Date Sampled:02/16/2022 1515

Project Name: KSC-FS1

Laboratory ID: XB18038-015 Matrix: Aqueous

Date Received: 02/18/2022 Project Number: 112G09581

13C8_PFOA 101 50-150 13C8_PFOS 95 50-150 13C9_PFNA 89 50-150 d-EtFOSA 80 50-150 d5-EtFOSAA 85 50-150 d3-MeFOSAA 82 50-150	Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C9_PFNA 89 50-150 d-EtFOSA 80 50-150 d5-EtFOSAA 85 50-150	13C8_PFOA	101	50-150
d-EtFOSAA 80 50-150 d5-EtFOSAA 85 50-150	13C8_PFOS	95	50-150
d5-EtFOSAA 85 50-150	13C9_PFNA	89	50-150
	d-EtFOSA	80	50-150
d3-MeFOSAA 82 50-150	d5-EtFOSAA	85	50-150
	d3-MeFOSAA	82	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0008-017.0-20220216

Project Name: KSC-FS1

Matrix: Aqueous

Laboratory ID: XB18038-016

Date Sampled:02/16/2022 1545

Date Received: 02/18/2022 Project Number: 112G09581

Run Prep Method SOP SPE

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/12/2022 2013 ASD

Prep Date 03/09/2022 1157 34241

Batch

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	40	U	80	40	20	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3	.) 763051-92-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	40	UL	80	40	20	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	40	U	80	40	20	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	40	U	80	40	20	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	57		40	20	10	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	11	I	40	20	10	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	20	U	40	20	10	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	20	U	40	20	10	ng/L	1
		otance mits						-	
13C2_4:2FTS		-150							
13C2_6:2FTS		-150							
13C2_8:2FTS	102 50	-150							
13C2_PFDoA	100 50	-150							
13C2_PFTeDA	81 50	-150							
13C3_PFBS	94 50	-150							
13C3_PFHxS	102 50	-150							
13C3-HFPO-DA	95 50	-150							
13C4_PFBA	90 50	-150							
13C4_PFHpA	100 50	-150							
13C5_PFHxA	102 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFPeA

13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

99

101

90

50-150

50-150

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Description: FS1-DPT0008-017.0-20220216

Laboratory ID: XB18038-016

Matrix: Aqueous

Date Sampled:02/16/2022 1545 Date Received: 02/18/2022

Project Name: KSC-FS1 Project Number: 112G09581

Surrogate		cceptance Limits
13C8_PFOA	99	50-150
13C8_PFOS	100	50-150
13C9_PFNA	96	50-150
d-EtFOSA	81	50-150
d5-EtFOSAA	88	50-150
d3-MeFOSAA	89	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0008-025.0-20220216

Project Name: KSC-FS1

Laboratory ID: XB18038-017 Matrix: Aqueous

Date Sampled:02/16/2022 1615

Date Received: 02/18/2022

Project Name: KSC-FS1

Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch 1 SOP SPE PFAS by ID SOP QSM B-15 03/15/2022 1449 MMM 03/09/2022 1157 34241 2 SOP SPE PFAS by ID SOP QSM B-15 1 03/15/2022 1421 ASD 03/14/2022 1626 34774

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	10		6.9	3.5	1.7	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.4	3.7	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	UQ	7.4	3.7	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.4	3.7	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	19		3.7	1.9	0.93	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.5	1	3.7	1.9	0.93	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	25		3.7	1.9	0.93	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	490		3.7	1.9	0.93	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	11	Q	3.7	1.9	0.93	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	11		3.7	1.9	0.93	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	41		3.7	1.9	0.93	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	130		3.7	1.9	0.93	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	25		3.7	1.9	0.93	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.93	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.2	I	3.7	1.9	0.93	ng/L	1

Surrogate	Q	Run 1 / % Recovery	Acceptance Limits	Q	Run 2 A % Recovery	cceptance Limits
13C2_4:2FTS	N	202	50-150	Ν	152	50-150
13C2_6:2FTS		125	50-150		106	50-150
13C2_8:2FTS		106	50-150		73	50-150
13C2_PFDoA		85	50-150		65	50-150
13C2_PFTeDA		74	50-150		60	50-150
13C3_PFBS		88	50-150		72	50-150
13C3_PFHxS		84	50-150		76	50-150
13C3-HFPO-DA		88	50-150		71	50-150
13C4_PFBA	Ν	49	50-150	Ν	41	50-150
13C4_PFHpA		91	50-150		74	50-150
13C5_PFHxA		93	50-150		75	50-150
13C5_PFPeA		85	50-150		66	50-150
13C6_PFDA		100	50-150		71	50-150

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \geq DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Date Received: 02/18/2022

Description: FS1-DPT0008-025.0-20220216

Project Name: KSC-FS1
Project Number: 112G09581

Laboratory ID: XB18038-017 Matrix: Aqueous

Surrogate Q	Run 1 % Recover	Acceptance y Limits	Run 2 Q % Recovery	Acceptance y Limits
13C7_PFUdA	94	50-150	72	50-150
13C8_PFOA	90	50-150	79	50-150
13C8_PFOS	94	50-150	77	50-150
13C9_PFNA	103	50-150	72	50-150
d-EtFOSA N	J 37	50-150	54	50-150
d5-EtFOSAA	101	50-150	74	50-150
d3-MeFOSAA	82	50-150	70	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0008-035.0-20220217

Project Name: KSC-FS1

Laboratory ID: XB18038-018 Matrix: Aqueous

> a = Surrogate failure = LCS/LCSD failure = MS/MSD failure

Date Sampled:02/17/2022 0720

Date Received: 02/18/2022

Project Number: 112G09581

Run Prep Method SOP SPE 1

13C3_PFHxS

13C4_PFBA

13C4_PFHpA

13C5 PFHxA

13C5_PFPeA

13C6_PFDA

13C7 PFUdA

13C3-HFPO-DA

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/15/2022 1500 MMM

Prep Date 03/09/2022 1157 34241

Batch

CAS Analytical Result Q LOQ LOD DL Parameter Number Units Run Method 756426-58-1 PFAS by ID SOP 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS) 3.6 IJ 7.2 3.6 1.8 ng/L PFAS by ID SOP 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...) 763051-92-9 3.6 U 7 2 3.6 ng/L 1 1.8 PFAS by ID SOP U 7 2 1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS) 39108-34-4 3.6 3.6 ng/L 1 1.8 1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS) 27619-97-2 PFAS by ID SOP UI 7.2 ng/L 1 3.6 3.6 1.8 1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS) 757124-72-4 PFAS by ID SOP 3.6 UQ 7.2 ng/L 3.6 1.8 Hexafluoropropylene oxide dimer acid (GenX) 13252-13-6 PFAS by ID SOP U 7.2 1 3.6 ng/L 3.6 1.8 4,8-dioxa-3H-perfluorononanoic acid (ADONA) 919005-14-4 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L N-ethylperfluoro-1-octanesulfonamide (EtFOSA) 4151-50-2 PFAS by ID SOP UQ 7 2 18 ng/L 1 3.6 3.6 N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA) 2991-50-6 PFAS by ID SOP 3.6 U 7.2 1.8 3.6 ng/L N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA) 2355-31-9 PFAS by ID SOP 3.6 U 7 2 1.8 ng/L 3.6 Perfluoro-1-butanesulfonic acid (PFBS) 375-73-5 PFAS by ID SOP 0.90 5.2 3.6 1.8 ng/L Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 18 U 3.6 1.8 0.90ng/L 1 Perfluoro-1-heptanesulfonic acid (PFHpS) 375-92-8 PFAS by ID SOP 1.8 U 3.6 0.90 ng/L 18 Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 0.90 1.8 U 3.6 1.8 ng/L Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 4.9 1.8 0.90 ng/L Perfluorohexanesulfonic acid (PFHxS) 355-46-4 PFAS by ID SOP 88 ng/L 1 3.6 1.8 0.90 Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 1.8 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-dodecanoic acid (PFDoA) 307-55-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 1.0 1 3.6 1.8 0.90 ng/L Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 9.8 3.6 1.8 0.90 ng/L 1 Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.8 U 3.6 1.8 ng/L 0.90PFAS by ID SOP Perfluoro-n-octanoic acid (PFOA) 335-67-1 2.6 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 18 U ng/L 1 3.6 1.8 0.90 Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 1.8 UC 3.6 1.8 0.90 ng/L Perfluoro-n-tridecanoic acid (PFTrDA) PFAS by ID SOP U 72629-94-8 1.8 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L 1 Perfluorooctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 1.8 U 3.6 1.8 ng/L 1 0.90Run 1 Acceptance Surrogate % Recovery \bigcirc Limits 13C2_4:2FTS N 202 50-150 13C2_6:2FTS 144 50-150 98 13C2_8:2FTS 50-150 13C2_PFDoA 76 50-150 N 48 13C2_PFTeDA 50-150 13C3_PFBS 84 50-150

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q =
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L =
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S =

50-150

50-150

50-150

50-150

50-150

50-150

50-150

50-150

94

87

55

95

91

85

96

91

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-DPT0008-035.0-20220217

Scription, F31-DF10000-033.0-20220217

Date Sampled:02/17/2022 0720 Project Name: KSC-FS1
Date Received: 02/18/2022 Project Number: 112G09581

Laboratory ID: XB18038-018

Matrix: Aqueous

Surrogate	Q	Run 1 A % Recovery	Acceptance Limits			
13C8_PFOA		97	50-150			
13C8_PFOS		92	50-150			
13C9_PFNA		98	50-150			
d-EtFOSA	N	27	50-150			
d5-EtFOSAA		100	50-150			
d3-MeFOSAA		88	50-150			

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB18038-019

Description: FS1-DPT0008-045.0-20220217

Date Sampled:02/17/2022 0745 Project Name: KSC-FS1 Date Received: 02/18/2022 Project Number: 112G09581

Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/12/2022 2106 ASD	03/09/2022 1157	34241

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.5	UL	7.0	3.5	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.5	UQ	7.0	3.5	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.5	UQ	7.0	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.5	U	7.0	3.5	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Ru	ın 1 Accep	otance							
		nits							
_		-150 -150							
		- 150 -150							
		-150							
_		-150							
_		-150							
		-150							
		-150							
		-150 -150							
_ ·		-150							
		-150							
		-150							
13C6_PFDA	75 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

70

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-DPT0008-045.0-20220217

Date Sampled:02/17/2022 0745

Project Name: KSC-FS1 Date Received: 02/18/2022 Project Number: 112G09581 Laboratory ID: XB18038-019

Matrix: Aqueous

Surrogate	Q %	Run 1 Recovery	Acceptance Limits		
13C8_PFOA		82	50-150		
13C8_PFOS		86	50-150		
13C9_PFNA		81	50-150		
d-EtFOSA	N	16	50-150		
d5-EtFOSAA		77	50-150		
d3-MeFOSAA		77	50-150		

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: XB18038-020

Description: FS1-FB-20220217-01

Date Sampled:02/17/2022 0750 Project Name: KSC-FS1
Date Received: 02/18/2022 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/12/2022 2117 ASD 03/09/2022 1157 34241

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Rur
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	4.1	U	8.1	4.1	2.0	ng/L	1
$\hbox{11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)}\\$	763051-92-9	PFAS by ID SOP	4.1	U	8.1	4.1	2.0	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	4.1	U	8.1	4.1	2.0	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	4.1	UL	8.1	4.1	2.0	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	4.1	U	8.1	4.1	2.0	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	4.1	U	8.1	4.1	2.0	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	4.1	U	8.1	4.1	2.0	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	4.1	U	8.1	4.1	2.0	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	4.1	U	8.1	4.1	2.0	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	4.1	U	8.1	4.1	2.0	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	2.0	U	4.0	2.0		ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	2.0	U	4.0		1.0		1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
·		•				2.0	1.0	ng/L	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.0	U	4.0	2.0	1.0	ng/L	1
Surrogate R Q % Re		otance mits							
13C2_4:2FTS	105 50	-150							
13C2_6:2FTS	106 50	-150							
13C2_8:2FTS	109 50	-150							
13C2_PFDoA	86 50	-150							
13C2_PFTeDA	74 50	-150							
13C3_PFBS	89 50	-150							
13C3_PFHxS	97 50	-150							
13C3-HFPO-DA	95 50	-150							
13C4_PFBA	94 50	-150							
13C4_PFHpA		-150							
13C5_PFHxA	91 50	-150							
13C5_PFPeA		-150							
13C6_PFDA		-150							
13C7_PFUdA		-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

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U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: FS1-FB-20220217-01

Date Sampled:02/17/2022 0750 Project Name: KSC-FS1
Date Received: 02/18/2022 Project Number: 112G09581

Laboratory ID: XB18038-020

Matrix: Aqueous

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	97	50-150
13C8_PFOS	93	50-150
13C9_PFNA	93	50-150
d-EtFOSA	81	50-150
d5-EtFOSAA	96	50-150
d3-MeFOSAA	87	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: XB18038-021

Description: FS1-FD-20220216-01

Date Sampled:02/16/2022 Project Name: KSC-FS1
Date Received: 02/18/2022 Project Number: 112G09581

Matrix: Aqueous

Run	Prep Method	Analytical Method D	ilution	Analysis Date Analyst	Prep Date Batch	1
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/12/2022 2127 ASD	03/09/2022 1157 34241	l
2	SOP SPE	PFAS by ID SOP QSM B-15	1	03/15/2022 1432 ASD	03/14/2022 1626 34774	ļ

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	4.2	UQ	8.3	4.2	2.1	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	4.2	UQ	8.3	4.2	2.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	4.2	U	8.3	4.2	2.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	86		4.1	2.1	1.0	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	48		4.1	2.1	1.0	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	36		4.1	2.1	1.0	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	3.8	IQ	4.1	2.1	1.0	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.0	1	4.1	2.1	1.0	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	11		4.1	2.1	1.0	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	6.8		4.1	2.1	1.0	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	2.1	UQ	4.1	2.1	1.0	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	2.1	U	4.1	2.1	1.0	ng/L	1
			Run 2 Ac ecovery	ceptance Limits					
13C2_4:2FTS N	153 50)-150	149	50-150					
13C2_6:2FTS	132 50)-150	116	50-150					
13C2_8:2FTS	77 50)-150	77	50-150					
13C2_PFDoA	68 50	-150	65	50-150					
13C2_PFTeDA N	45 50	-150	55	50-150					
13C3_PFBS	68 50	-150	72	50-150					
13C3_PFHxS	74 50	-150	75	50-150					
13C3-HFPO-DA	70 50	-150	75	50-150					
13C4_PFBA N	43 50)-150 N	42	50-150					

LOQ = Limit of Quantitation	V = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L = LCS/LCSD failure
Q = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection	D = Dilution > 1	S = MS/MSD failure

50-150

50-150

50-150

50-150

80

79

66

76

50-150

50-150

50-150

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C4_PFHpA

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

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72

74

68

75

Client: Tetra Tech

Description: FS1-FD-20220216-01

Project Name: KSC-FS1

Date Sampled:02/16/2022

Date Received: 02/18/2022

Project Number: 112G09581

Laboratory ID: XB18038-021 Matrix: Aqueous

13C7_PFUdA 70 50-150 76 50-150 13C8_PFOA 81 50-150 79 50-150 13C8_PFOS 75 50-150 81 50-150 13C9_PFNA 73 50-150 75 50-150
13C8_PFOS 75 50-150 81 50-150
_
13C9_PFNA 73 50-150 75 50-150
d-EtFOSA N 9.7 50-150 55 50-150
d5-EtFOSAA 77 50-150 78 50-150
d3-MeFOSAA 71 50-150 71 50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

QC Summary

PFAS by LC/MS/MS - MB

Sample ID: XQ34124-001 Batch: 34124

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/08/2022 1620

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
9CI-PF3ONS	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 2124
11CI-PF3OUdS	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 2124
8:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 2124
6:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 2124
4:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 2124
GenX	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 2124
ADONA	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 2124
EtFOSA	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 2124
EtFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 2124
MeFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	03/09/2022 2124
PFBS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFDS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFHpS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFNS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFPeS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFHxS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFBA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFDoA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFHpA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFHxA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFNA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFOA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFPeA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFTeDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFTrDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFUdA	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
PFOS	2.0	U	1	4.0	2.0	1.0	ng/L	03/09/2022 2124
Surrogate	Q %R	ec	Accep Lin					
13C2_4:2FTS	100	<u> </u>	50-	150				
13C2_6:2FTS	103			150				
13C2_8:2FTS	110)	50-	150				
13C2_PFDoA	91			150				
13C2_PFTeDA	80			150				
13C3_PFBS	98		50-	150				
13C3_PFHxS	87		50-	150				
13C3-HFPO-DA	99		50-	150				
13C4_PFBA	97		50-	150				
13C4_PFHpA	94		50-	150				
13C5_PFHxA	89		50-	150				
13C5_PFPeA	97		50-					

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - MB

Sample ID: XQ34124-001 Batch: 34124

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/08/2022 1620

Surrogate	Q % Rec	Acceptance Limit
13C6_PFDA	98	50-150
13C7_PFUdA	90	50-150
13C8_PFOA	95	50-150
13C8_PFOS	93	50-150
13C9_PFNA	94	50-150
d-EtFOSA	77	50-150
d5-EtFOSAA	95	50-150
d3-MeFOSAA	97	50-150

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: XQ34124-002 Batch: 34124

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 03/08/2022 1620

Spike Amount Result %Rec % Rec Analysis Date Parameter (ng/L) Q Limit (ng/L) Dil 9CI-PF3ONS 15 14 1 94 70-150 03/09/2022 2135 11CI-PF3OUdS 89 15 13 1 70-150 03/09/2022 2135 8:2 FTS 15 15 1 96 67-138 03/09/2022 2135 15 1 98 6:2 FTS 15 64-140 03/09/2022 2135 4:2 FTS 15 12 1 83 63-143 03/09/2022 2135 GenX 32 29 1 89 70-150 03/09/2022 2135 **ADONA** 15 15 98 70-150 03/09/2022 2135 **EtFOSA** 19 70-150 03/09/2022 2135 16 1 118 **EtFOSAA** 16 14 87 61-135 03/09/2022 2135 MeFOSAA 16 13 83 65-136 03/09/2022 2135 **PFBS** 93 72-130 03/09/2022 2135 14 13 93 **PFDS** 15 53-142 03/09/2022 2135 14 PFHpS 15 14 1 94 69-134 03/09/2022 2135 **PFNS** 15 16 1 104 69-127 03/09/2022 2135 **PFPeS** 15 16 105 71-127 03/09/2022 2135 **PFHxS** 15 97 68-131 03/09/2022 2135 14 PFBA 03/09/2022 2135 16 16 100 73-129 90 **PFDA** 03/09/2022 2135 16 14 1 71-129 **PFDoA** 16 16 1 100 72-134 03/09/2022 2135 **PFHpA** 16 17 108 72-130 03/09/2022 2135 **PFHxA** 16 16 100 72-129 03/09/2022 2135 PFNA 16 16 99 69-130 03/09/2022 2135 **PFOA** 95 71-133 03/09/2022 2135 16 15 **PFPeA** 102 72-129 03/09/2022 2135 16 16 **PFTeDA** 16 16 103 71-132 03/09/2022 2135 **PFTrDA** 16 16 1 102 65-144 03/09/2022 2135 **PFUdA** 16 16 1 99 69-133 03/09/2022 2135 **PFOS** 15 15 101 65-140 03/09/2022 2135 Acceptance Surrogate Q % Rec Limit 96 50-150 13C2_4:2FTS 89 50-150 13C2 6:2FTS 13C2_8:2FTS 95 50-150 13C2_PFDoA 50-150 83 13C2_PFTeDA 77 50-150 13C3_PFBS 92 50-150 13C3_PFHxS 85 50-150 13C3-HFPO-DA 94 50-150 13C4_PFBA 91 50-150 13C4_PFHpA 85 50-150 13C5_PFHxA 84 50-150

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

13C5_PFPeA

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

91

50-150

PFAS by LC/MS/MS - LCS

Sample ID: XQ34124-002 Batch: 34124

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/08/2022 1620

Surrogate	Q % Rec	Acceptance Limit		
13C6_PFDA	92	50-150		
13C7_PFUdA	85	50-150		
13C8_PFOA	87	50-150		
13C8_PFOS	88	50-150		
13C9_PFNA	92	50-150		
d-EtFOSA	63	50-150		
d5-EtFOSAA	89	50-150		
d3-MeFOSAA	93	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria * = RSD is out of criteria

PFAS by LC/MS/MS - MS

Sample ID: XB18038-010MS Batch: 34124

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/08/2022 1620

Parameter	Sample Amour (ng/L)		Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	ND	14	13	<u> </u>	1	97	70-150	03/12/2022 2346
11CI-PF3OUdS	ND	14	11		1	83	70-150	03/12/2022 2346
8:2 FTS	ND	14	12		1	89	67-138	03/12/2022 2346
6:2 FTS	ND	14	14		1	103	64-140	03/12/2022 2346
4:2 FTS	ND	14	12		1	88	63-143	03/12/2022 2346
GenX	ND	29	29		1	99	70-150	03/12/2022 2346
ADONA	ND	14	14		1	99	70-150	03/12/2022 2346
EtFOSA	ND	15	12		1	84	70-150	03/12/2022 2346
EtFOSAA	ND	15	13		1	90	61-135	03/12/2022 2346
MeFOSAA	ND	15	13		1	92	65-136	03/12/2022 2346
PFBS	76	13	88		1	93	72-130	03/12/2022 2346
PFDS	ND	14	14		1	101	53-142	03/12/2022 2346
PFHpS	ND	14	14		1	102	69-134	03/12/2022 2346
PFNS	ND	14	13		1	94	69-127	03/12/2022 2346
PFPeS	43	14	54		1	81	71-127	03/12/2022 2346
PFHxS	29	13	45		1	123	68-131	03/12/2022 2346
PFBA	4.1	15	18		1	96	73-129	03/12/2022 2346
PFDA	ND	15	15		1	101	71-129	03/12/2022 2346
PFDoA	ND	15	15		1	101	72-134	03/12/2022 2346
PFHpA	2.0	15	17		1	105	72-130	03/12/2022 2346
PFHxA	10	15	23		1	88	72-129	03/12/2022 2346
PFNA	ND	15	15		1	102	69-130	03/12/2022 2346
PFOA	ND	15	14		1	95	71-133	03/12/2022 2346
PFPeA	6.2	15	20		1	94	72-129	03/12/2022 2346
PFTeDA	ND	15	15		1	105	71-132	03/12/2022 2346
PFTrDA	ND	15	14		1	95	65-144	03/12/2022 2346
PFUdA	ND	15	15		1	102	69-133	03/12/2022 2346
PFOS	1.5	13	14		1	95	65-140	03/12/2022 2346
Surrogate	Q %	Ac 6 Rec	cceptance Limit					
13C2_4:2FTS	Ν	184	50-150					
13C2_6:2FTS		129	50-150					
13C2_8:2FTS		97	50-150					
13C2_PFDoA		82	50-150					
13C2_PFTeDA		63	50-150					
13C3_PFBS		77	50-150					
13C3_PFHxS		92	50-150					
13C3-HFPO-DA		77	50-150					
13C4_PFBA	N	46	50-150					
13C4_PFHpA		85	50-150					
13C5_PFHxA		88	50-150					
13C5_PFPeA		77	50-150					
- - · · · - · ·								

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MS

Sample ID: XB18038-010MS Batch: 34124

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/08/2022 1620

Surrogate	Q % Rec	Acceptance Limit		
13C6_PFDA	88	50-150		
13C7_PFUdA	77	50-150		
13C8_PFOA	97	50-150		
13C8_PFOS	93	50-150		
13C9_PFNA	90	50-150		
d-EtFOSA	64	50-150		
d5-EtFOSAA	90	50-150		
d3-MeFOSAA	85	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

+ = RPD is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

PFAS by LC/MS/MS - MSD

Sample ID: XB18038-010MD Batch: 34124

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/08/2022 1620

Parameter	Samp Amor (ng/l	unt An	oike nount g/L)	Result (ng/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
9CI-PF3ONS	ND	13		13		1	102	2.7	70-150	30	03/12/2022 2356
11CI-PF3OUdS	ND	13		12		1	87	1.5	70-150	30	03/12/2022 2356
8:2 FTS	ND	14		13		1	93	1.4	67-138	30	03/12/2022 2356
6:2 FTS	ND	13		14		1	104	1.3	64-140	30	03/12/2022 2356
4:2 FTS	ND	13		12		1	90	0.11	63-143	30	03/12/2022 2356
GenX	ND	28		27		1	96	5.9	70-150	30	03/12/2022 2356
ADONA	ND	13		14		1	106	4.6	70-150	30	03/12/2022 2356
EtFOSA	ND	14		17	+	1	123	35	70-150	30	03/12/2022 2356
EtFOSAA	ND	14		15		1	108	15	61-135	30	03/12/2022 2356
MeFOSAA	ND	14		14		1	101	6.8	65-136	30	03/12/2022 2356
PFBS	76	13		96	N	1	161	8.9	72-130	30	03/12/2022 2356
PFDS	ND	14		14		1	106	1.8	53-142	30	03/12/2022 2356
PFHpS	ND	14		14 13		1 1	106 92	1.7	69-134	30	03/12/2022 2356
PFNS PFPeS	ND 43	14 13		13 58		1	92 111	4.0 6.6	69-127 71-127	30 30	03/12/2022 2356 03/12/2022 2356
PFHxS	43 29	13		48	N	1	146	5.5	68-131	30	03/12/2022 2356
PFBA	4.1	14		18	14	1	100	1.2	73-129	30	03/12/2022 2356
PFDA	ND	14		14		1	99	4.0	71-129	30	03/12/2022 2356
PFDoA	ND	14		15		1	109	5.4	72-134	30	03/12/2022 2356
PFHpA	2.0	14		18		1	111	3.2	72-130	30	03/12/2022 2356
PFHxA	10	14		24		1	101	6.3	72-129	30	03/12/2022 2356
PFNA	ND	14		15		1	105	0.28	69-130	30	03/12/2022 2356
PFOA	ND	14		14		1	102	4.7	71-133	30	03/12/2022 2356
PFPeA	6.2	14		21		1	104	5.6	72-129	30	03/12/2022 2356
PFTeDA	ND	14		14		1	99	8.1	71-132	30	03/12/2022 2356
PFTrDA	ND	14		15		1	106	9.1	65-144	30	03/12/2022 2356
PFUdA	ND	14		14		1	99	5.7	69-133	30	03/12/2022 2356
PFOS	1.5	13		16		1	107	8.5	65-140	30	03/12/2022 2356
Surrogate	Q	% Rec	Accer Lii	otance mit							
13C2_4:2FTS	N	180	50	-150							
13C2_6:2FTS		122	50	-150							
13C2_8:2FTS		92	50	-150							
13C2_PFDoA		77	50	-150							
13C2_PFTeDA		67	50	-150							
13C3_PFBS		73	50	-150							
13C3_PFHxS		82		-150							
13C3-HFPO-DA		76		-150							
13C4_PFBA	N	44		-150							
13C4_PFHpA	• •	81		-150							
13C5_PFHxA		89		-150							
13C5_PFPeA		73		-150							
		-									

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MSD

Sample ID: XB18038-010MD Batch: 34124

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/08/2022 1620

Surrogate	Ω % Rec	Acceptance Limit	
13C6_PFDA	83	50-150	
13C7_PFUdA	79	50-150	
13C8_PFOA	89	50-150	
13C8_PFOS	88	50-150	
13C9_PFNA	85	50-150	
d-EtFOSA	57	50-150	
d5-EtFOSAA	80	50-150	
d3-MeFOSAA	82	50-150	

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - MB

Sample ID: XQ34241-001 Batch: 34241

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/09/2022 1157

9CI-PF3ONS 11CI-PF3OUdS 8:2 FTS 6:2 FTS 4:2 FTS GenX	4.0 4.0 4.0 4.0 4.0 4.0	U U U U U	1 1 1 1	8.0 8.0 8.0	4.0 4.0 4.0	2.0 2.0 2.0	ng/L ng/L	03/12/2022 1755 03/12/2022 1755
8:2 FTS 6:2 FTS 4:2 FTS	4.0 4.0 4.0 4.0 4.0	U U U	1 1	8.0			=	03/12/2022 1755
6:2 FTS 4:2 FTS	4.0 4.0 4.0 4.0	U U	1		4.0	2.0	4	
4:2 FTS	4.0 4.0 4.0	U		0.0			ng/L	03/12/2022 1755
	4.0 4.0		1	8.0	4.0	2.0	ng/L	03/12/2022 1755
GenX	4.0	1.1		8.0	4.0	2.0	ng/L	03/12/2022 1755
		U	1	8.0	4.0	2.0	ng/L	03/12/2022 1755
ADONA		U	1	8.0	4.0	2.0	ng/L	03/12/2022 1755
EtFOSA	4.0	U	1	8.0	4.0	2.0	ng/L	03/12/2022 1755
EtFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	03/12/2022 1755
MeFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	03/12/2022 1755
PFBS	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFDS	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFHpS	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFNS	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFPeS	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFHxS	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFBA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFDoA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFHpA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFHxA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFNA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFOA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFPeA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFTeDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFTrDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFUdA	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
PFOS	2.0	U	1	4.0	2.0	1.0	ng/L	03/12/2022 1755
Surrogate	Q %R	ec	Accep Lin	tance nit				
13C2_4:2FTS	106	·	50-	150				
13C2_6:2FTS	118			150				
13C2_8:2FTS	98			150				
13C2_PFDoA	96			150				
13C2_PFTeDA	82			150				
13C3_PFBS	92			150				
13C3_PFHxS	10 ⁻			150				
13C3-HFPO-DA	97			150				
13C4_PFBA	95			150				
13C4_PFHpA	88			150				
13C5_PFHxA	94			150				
13C5_PFPeA	90			150				
1303_1110A	90		30-	150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

PFAS by LC/MS/MS - MB

Sample ID: XQ34241-001 Batch: 34241

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/09/2022 1157

Surrogate	Q % Rec	Acceptance Limit	
13C6_PFDA	98	50-150	
13C7_PFUdA	88	50-150	
13C8_PFOA	99	50-150	
13C8_PFOS	106	50-150	
13C9_PFNA	98	50-150	
d-EtFOSA	54	50-150	
d5-EtFOSAA	103	50-150	
d3-MeFOSAA	90	50-150	

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DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: XQ34241-002 Batch: 34241

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/09/2022 1157

Spike Amount (ng/L)	Result	O Dil	% Rec	%Rec	Analysis Date
					03/12/2022 1806
					03/12/2022 1806
					03/12/2022 1806
					03/12/2022 1806
					03/12/2022 1806
					03/12/2022 1806
					03/12/2022 1806
16	18	1	113	70-150	03/12/2022 1806
16	17	1	105	61-135	03/12/2022 1806
16	18	1	113	65-136	03/12/2022 1806
14	15	1	105	72-130	03/12/2022 1806
15	17	1	107	53-142	03/12/2022 1806
15	17	1	113	69-134	03/12/2022 1806
15	16	1	105	69-127	03/12/2022 1806
15	16	1	107	71-127	03/12/2022 1806
15	17	1	114	68-131	03/12/2022 1806
16	17	1	108	73-129	03/12/2022 1806
16	18	1	114	71-129	03/12/2022 1806
16	19	1	116	72-134	03/12/2022 1806
16	20	1	125	72-130	03/12/2022 1806
16	17	1	106	72-129	03/12/2022 1806
16	18	1	110	69-130	03/12/2022 1806
16	18	1	110	71-133	03/12/2022 1806
					03/12/2022 1806
					03/12/2022 1806
					03/12/2022 1806
					03/12/2022 1806
15			109	65-140	03/12/2022 1806
Q % Rec	Acceptance Limit	2			
106	50-150				
N 158	50-150				
97	50-150				
91	50-150				
76	50-150				
96	50-150				
97	50-150				
97	50-150				
96	50-150				
•	Amount (ng/L) 15 15 15 15 15 15 16 16 16 16 16 17 15 15 15 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16	Amount (ng/L) 15 18 15 17 15 15 15 15 15 15 16 32 34 15 17 16 18 16 17 16 18 14 15 15 17 15 16 18 14 15 17 15 16 18 14 15 17 15 16 18 16 17 16 18 16 17 16 18 16 17 16 18 16 17 16 18 16 18 16 17 16 18 16 17 16 16 18 16 18 16 17 16 16 18 16 17 16 16 18 16 18 16 17 16 16 18 16 17 16 18 16 18 16 18 16 19 10 10 10 10 10 10 10 10 10 10 10 10 10	Amount (ng/L) Q Dil 15	Amount (ng/L)	Amount (ng/L) Result (ng/L) Q Dil % Rec Limit 15 18 1 119 70-150 15 17 1 113 70-150 15 15 1 97 67-138 15 35 N 1 230 64-140 15 16 1 106 70-150 15 17 1 115 70-150 15 17 1 115 70-150 15 17 1 115 70-150 16 18 1 113 70-150 16 17 1 105 61-135 16 18 1 113 65-136 14 15 1 105 72-130 15 17 1 107 71-127 15 16 1 107 71-127 15 16 1 107 71-127

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N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: XQ34241-002 Batch: 34241

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/09/2022 1157

Surrogate	Q % Rec	Acceptance Limit	
13C6_PFDA	98	50-150	
13C7_PFUdA	100	50-150	
13C8_PFOA	109	50-150	
13C8_PFOS	98	50-150	
13C9_PFNA	96	50-150	
d-EtFOSA	84	50-150	
d5-EtFOSAA	96	50-150	
d3-MeFOSAA	88	50-150	

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U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - MS

Sample ID: XB18038-009MS Batch: 34241

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/09/2022 1157

Parameter	Sample Amount (ng/L)	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	ND	150	160		1	111	70-150	03/12/2022 1859
11CI-PF3OUdS	ND	150	150		1	102	70-150	03/12/2022 1859
8:2 FTS	ND	150	160		1	107	67-138	03/12/2022 1859
6:2 FTS	ND	150	180		1	108	64-140	03/12/2022 1859
4:2 FTS	ND	150	160		1	104	63-143	03/12/2022 1859
GenX	ND	320	320		1	100	70-150	03/12/2022 1859
ADONA	ND	150	170		1	115	70-150	03/12/2022 1859
EtFOSA	ND	160	190		1	122	70-150	03/12/2022 1859
EtFOSAA	ND	160	140		1	87	61-135	03/12/2022 1859
MeFOSAA	ND	160	140		1	89	65-136	03/12/2022 1859
PFBS	19	140	170		1	105	72-130	03/12/2022 1859
PFDS	ND	150	160		1	102	53-142	03/12/2022 1859
PFHpS	ND	150	160		1	106	69-134	03/12/2022 1859
PFNS	ND	150	150		1	100	69-127	03/12/2022 1859
PFPeS	21	150	180		1	109	71-127	03/12/2022 1859
PFHxS	100	150	250		1	100	68-131	03/12/2022 1859
PFBA	ND	160	170		1	105	73-129	03/12/2022 1859
PFDA	ND	160	160		1	99	71-129	03/12/2022 1859
PFDoA	ND	160	180		1 1	114 111	72-134 72-130	03/12/2022 1859
PFHpA PFHxA	ND ND	160 160	180 190		1	111	72-130 72-129	03/12/2022 1859 03/12/2022 1859
PFNA	ND ND	160	190		1	116	69-130	03/12/2022 1859
PFOA	ND	160	160		1	102	71-133	03/12/2022 1037
PFPeA	ND	160	170		1	107	72-129	03/12/2022 1037
PFTeDA	ND	160	190		1	116	71-132	03/12/2022 1859
PFTrDA	ND	160	170		1	105	65-144	03/12/2022 1859
PFUdA	ND	160	150		1	95	69-133	03/12/2022 1859
PFOS	ND	150	160		1	105	65-140	03/12/2022 1859
Surrogate	Q % Re	C Ac	cceptance Limit					
13C2_4:2FTS	110		50-150					
13C2_6:2FTS	96		50-150					
13C2_8:2FTS	87		50-150					
13C2_PFDoA	89		50-150					
13C2_PFTeDA	76		50-150					
13C3_PFBS	94		50-150					
13C3_PFHxS	91		50-150					
13C3-HFPO-DA	92		50-150					
13C4_PFBA	97		50-150					
13C4_PFHpA	89		50-150					
13C5_PFHxA	93		50-150					
	99		50-150					

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DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MS

Sample ID: XB18038-009MS Batch: 34241

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/09/2022 1157

13C6_PFDA 91 50-150 13C7_PFUdA 96 50-150 13C8_PFOA 96 50-150 13C8_PFOS 94 50-150	ate Q %	Acceptance c Limit	
13C8_PFOA 96 50-150 13C8_PFOS 94 50-150	FDA 9	50-150	
13C8_PFOS 94 50-150	FUdA 9	50-150	
	FOA	50-150	
	FOS	50-150	
13C9_PFNA 88 50-150	FNA 8	50-150	
d-EtFOSA 78 50-150	5A 7	50-150	
d5-EtFOSAA 84 50-150	SAA 8	50-150	
d3-MeFOSAA 82 50-150	DSAA 8	50-150	

LOQ = Limit of Quantitation

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N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - MSD

Sample ID: XB18038-009MD Batch: 34241

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/09/2022 1157

Parameter	Sample Amount (ng/L)	Spike Amoun (ng/L)	t Result (ng/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
9CI-PF3ONS	ND	150	170		1	111	0.28	70-150	30	03/12/2022 1910
11CI-PF3OUdS	ND	150	150		1	102	0.26	70-150	30	03/12/2022 1910
8:2 FTS	ND	150	130		1	86	22	67-138	30	03/12/2022 1910
6:2 FTS	ND	150	170		1	104	4.1	64-140	30	03/12/2022 1910
4:2 FTS	ND	150	130		1	86	19	63-143	30	03/12/2022 1910
GenX	ND	320	280		1	89	12	70-150	30	03/12/2022 1910
ADONA	ND	150	170		1	115	0.73	70-150	30	03/12/2022 1910
EtFOSA	ND	160	200		1	123	0.88	70-150	30	03/12/2022 1910
EtFOSAA	ND	160	160		1	97	10	61-135	30	03/12/2022 1910
MeFOSAA	ND	160	160		1	97	8.5	65-136	30	03/12/2022 1910
PFBS	19	140	180		1	112	5.8	72-130	30	03/12/2022 1910
PFDS	ND	150	160		1	104	1.9	53-142	30	03/12/2022 1910
PFHpS	ND	150	170		1	113	6.4	69-134	30	03/12/2022 1910
PFNS	ND	150	150		1	98	2.6	69-127	30	03/12/2022 1910
PFPeS	21	150	180		1	104	3.8	71-127	30	03/12/2022 1910
PFHxS PFBA	100 ND	150 160	250 170		1 1	103 106	1.7 1.0	68-131 73-129	30 30	03/12/2022 1910 03/12/2022 1910
PFDA	ND	160	160		1	100	1.0	73-129	30	03/12/2022 1910
PFDoA	ND	160	170		1	101	8.8	71-129	30	03/12/2022 1910
PFHpA	ND	160	190		1	117	5.8	72-134	30	03/12/2022 1910
PFHxA	ND	160	190		1	112	0.21	72-130	30	03/12/2022 1710
PFNA	ND	160	170		1	107	7.9	69-130	30	03/12/2022 1910
PFOA	ND	160	170		1	105	3.6	71-133	30	03/12/2022 1910
PFPeA	ND	160	180		1	111	3.6	72-129	30	03/12/2022 1910
PFTeDA	ND	160	170		1	107	7.7	71-132	30	03/12/2022 1910
PFTrDA	ND	160	170		1	108	3.3	65-144	30	03/12/2022 1910
PFUdA	ND	160	170		1	103	8.8	69-133	30	03/12/2022 1910
PFOS	ND	150	160		1	107	2.3	65-140	30	03/12/2022 1910
Surrogate	Q % R	ec A	cceptance Limit							
13C2_4:2FTS	117	1	50-150							
13C2_6:2FTS	103	3	50-150							
13C2_8:2FTS	103	3	50-150							
13C2_PFDoA	96		50-150							
13C2_PFTeDA	84		50-150							
13C3_PFBS	98		50-150							
13C3_PFHxS	105		50-150							
13C3-HFPO-DA	103	3	50-150							
13C4_PFBA	101		50-150							
13C4_PFHpA	98		50-150							
13C5_PFHxA	98		50-150							
13C5_PFPeA	96		50-150							

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DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - MSD

Sample ID: XB18038-009MD Batch: 34241

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/09/2022 1157

Surrogate	Q % Rec	Acceptance Limit	
13C6_PFDA	111	50-150	
13C7_PFUdA	94	50-150	
13C8_PFOA	112	50-150	
13C8_PFOS	108	50-150	
13C9_PFNA	102	50-150	
d-EtFOSA	85	50-150	
d5-EtFOSAA	91	50-150	
d3-MeFOSAA	92	50-150	

LOQ = Limit of Quantitation

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DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - MB

Sample ID: XQ34774-001 Batch: 34774

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/14/2022 1626

Parameter	Resu	It Q	Dil	LOQ	LOD	DL	Units	Analysis Date
6:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/15/2022 1315
Surrogate	Q	% Rec	Accept Lim	tance nit				
13C2_4:2FTS		94	50-1	150				
13C2_6:2FTS		105	50-1	150				
13C2_8:2FTS		90	50-1	150				
13C2_PFDoA		84	50-1	150				
13C2_PFTeDA		86	50-1	150				
13C3_PFBS		92	50-1	150				
13C3_PFHxS		93	50-1	150				
13C3-HFPO-DA		93	50-150					
13C4_PFBA		93	50-150					
13C4_PFHpA		96	50-150					
13C5_PFHxA		89	50-1	150				
13C5_PFPeA		94	50-1	150				
13C6_PFDA		95	50-1	150				
13C7_PFUdA		94	50-1	150				
13C8_PFOA		97	50-1	150				
13C8_PFOS		97	50-1	150				
13C9_PFNA		91	50-1	150				
d-EtFOSA		76	50-1	150				
d5-EtFOSAA		91	50-1	150				
d3-MeFOSAA		86	50-1	150				

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DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: XQ34774-002 Batch: 34774 Matrix: Aqueous Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP QSM B-15

Prep Date: 03/14/2022 1626

Parameter	Spike Amount (ng/L)	Result (ng/L) (Q Dil	% Rec	%Rec Limit	Analysis Date
6:2 FTS	15	14	1	91	64-140	03/15/2022 1326
Surrogate	Q % Rec	Acceptance Limit				
13C2_4:2FTS	95	50-150				
13C2_6:2FTS	109	50-150				
13C2_8:2FTS	85	50-150				
13C2_PFDoA	72	50-150				
13C2_PFTeDA	79	50-150				
13C3_PFBS	94	50-150				
13C3_PFHxS	97	50-150				
13C3-HFPO-DA	93	50-150				
13C4_PFBA	95	50-150				
13C4_PFHpA	95	50-150				
13C5_PFHxA	94	50-150				
13C5_PFPeA	94	50-150				
13C6_PFDA	93	50-150				
13C7_PFUdA	86	50-150				
13C8_PFOA	98	50-150				
13C8_PFOS	89	50-150				
13C9_PFNA	87	50-150				
d-EtFOSA	60	50-150				
d5-EtFOSAA	81	50-150				
d3-MeFOSAA	81	50-150				

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Chain of Custody and Miscellaneous Documents

BAGE L OF A PAGE L OF A PAGE L OF A PAGE L OF A PAGE SINGTON NAME AND CONTACT: ADDRESS 106 Ventury, Point Dr. CITY, STATE West Colomba 15 C	G) P	XB18038 KB18038 KB1
NUW PHO (41) (30)	CONTAINER TYPE CONTAINER TYPE PLASTIC (P) or GLASS (G) PRESERVATIVE USED USED OF CONTAINER TYPE PLASTIC (P) or GLASS (G)	1.
AIN OF CUSTODY PROJECT MANAGER Mark Somer FRELD OPERATIONS LEADER (hock Sometone) CARRIERWAYBILL NUMBER	BOTTOM DEPTH (FT) MATRIX (GW, SO, SW, SD, OC, ETC.) COLLECTION METHOD GRAS (G) COMP (C)	3 7 66 6 3 25 27 6 6 10 14 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
ech, Inc. CH. FACILITY: KSC-FS1 URE: - Churk Sorder	AT X 48 hr.	\$1-000000-000-0000016 21 \$21-000000-000-0000016 21 \$21-0000000-000-0000016 21 \$31-000000-000-000-00016 21 \$31-000000-000-000-000016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-0000000-000-000-00016 22 \$31-0000000-000-000-00016 22 \$31-0000000-000-000-00016 22 \$31-0000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-000-000-00016 22 \$31-000000-0000-0000-0000-00016 22 \$31-0000000-0000-0000-0000-0000-0000-000
Te Tetra Tecl PROJECT NO: 5/1/3 C-01581 SAMPLERS (SIGNATURE)	STANDARD TAT STANDARD TAT STANDARD TAT STANDARD TAT STANDARD TANDARD T	(22) (23) (23) (23) (23) (23) (23) (23)

PAGE A OF 2	DNA CO	Colomba, 3C	SUKERNICO		XB18038			DATE 122 TIME COLF 1230 DATE TIME TIME DATE TIME AVIOR
No. 2584		SLASS [G] P	1 / 85.					Feat Ex MY+CM CX-1
Y NUMBER	35R PHONE NUMBER (412) 921 - \$623 NS LEADER PHONE NUMBER (321) 591-7580		ETC., COLLECTION METHOD GRAB (G) COMP (C) No. OF CONTAINERS	87			16	1. RECEIVED BY 1. RECEIVED BY 1. TIME 2. RECEIVED BY 2. LOW (FIELD COPY)
CHAIN OF CUSTODY	PROJECT MANAGER //ALCK JOHNGT FIELD OPERATIONS LEADER Chuck Sordon CARRIER/WAYBILL NUMBER	p, qc,	TOP DEPTH (FT) BOTTOM DEPTH (FT) MATRIX (GW, SO, SW, S	3 7 6	15 19 23 27	3 37	111	DATE / 22 DATE / 32 DATE / 32
	SAMPLERS (SIGNATURE) SAMPLERS (SIGNATURE) - Chuck Sorden	STANDARD TAT ⊠ RUSH TAT □ □ 24 hr. □ 48 hr. □ 72 hr. □ 7 day □ 14 day	TIME SAMPLE TO	1515 FSI-DPRODOS 2005.0-2022,0216 23	1 1545 1810 CONTRONO COLO COLO DA 18 18 18 18 18 18 18 18 18 18 18 18 18		2000 F3-F6-30326217-01	1. RELINGUISHED BY 2. RELINGUISHED BY 3. RELINGUISHED BY COMMENTS COMMEN



Samples Receipt Checklist (SRC) (ME0018C-15)

Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020 Page 1 of 1

Sample Receipt Checklist (SRC)

Client: TETRA TECH	Cooler Inspected by/date: MEH / 62/18/2022 Lot #: XB18038
Means of receipt: P	ace Client UPS FedEx Other:
✓ Yes No	1. Were custody seals present on the cooler?
✓ Yes No No	2. If custody seals were present, were they intact and unbroken?
pH Strip ID: NA	Chlorine Strip ID: NA Tested by: NA
Original temperature upor	n receipt / Derived (Corrected) temperature upon receipt
4.7 /4.7 °C 2.1 /2	"I oC NY \NY oC NY \NY oC
Method: Temperature	Blank Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C
Method of coolant: ✓	Wet Icc Ice Packs Dry Ice None
☐Yes ☐No ☑NA	 If temperature of any cooler exceeded 6.0°C, was Project Manager Notified?
	PtvI was Notified by: phone / email / face-to-face (circle one).
	4. Is the commercial courier's packing slip attached to this form?
✓ Yes L No	Were proper custody procedures (relinquished/received) followed?
Yes No	6. Were sample IDs listed on the COC?
Yes No	7. Were sample IDs listed on all sample containers?
Yes No	8. Was collection date & time listed on the COC?
Yes No	9. Was collection date & time listed on all sample containers? 10. Part list. 11. Part list. 12. Part list. 13. Part list. 14. Part list. 15. Part list. 16. Part list. 16. Part list. 17. Part list. 18. Part list. 19. Part list
✓ Yes No	10. Did all container label information (ID, date, time) agree with the COC?
✓ Yes No	11. Were tests to be performed listed on the COC?
✓ Yes ☐ No	12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
✓ Yes □ No	13. Was adequate sample volume available?
Yes ✓ No	14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ✓ No	15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
Yes No INA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (%"or 6mm in diameter)
	in any of the VOA viais?
Yes No VNA	17. Were all DRO/mctals/nutrient samples received at a pH of < 2?
L Yes L No VNA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
Yes No NA	19. Were all applicable NH ₃ /TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐Yes ☐No ☑NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc)
	correctly transcribed from the COC into the comment section in LIMS?
Yes ✓ No	21. Was the quote number listed on the container label? If yes, Quote #
Sample Preservation (N	dust be completed for any sample(s) incorrectly preserved or with headspace.)
Sample(s) NA	were received incorrectly preserved and were adjusted accordingly
in sample receiving with 3	mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA
Time of preservation NA	. If more than one preservative is needed, please note in the comments below.
Sample(s) NA	were received with bubbles >6 mm in diameter.
Samples(s) NA	were received with TRC > 0.5 mg/L (If #19 is $n\sigma$) and were
adjusted accordingly in san	nple receiving with sodium thiosulfate (Na ₂ S ₂ O ₃) with Shealy [D: NA
SR barcode labels applied	by: MEH Date: 02/18/2022
Comments;	



Report of Analysis

Tetra Tech

Foster Plaza 7 661 Anderson Drive Pittsburgh, PA 15220 Attention: Mark Jonnet

Project Name: KSC - STP1/FS1

Project Number: 112G09581

Lot Number: XC12009

Date Completed:04/04/2022

Kathy Smith

04/05/2022 12:03 PM Approved and released by: Project Manager II: **Kathy E. Smith**





The electronic signature above is the equivalent of a handwritten signature.

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SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

Case Narrative Tetra Tech Lot Number: XC12009

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the Pace Quality Assurance Management Plan (QAMP), applicable Shealy standard operating procedures (SOPs), the 2003 NELAC standard, and Shealy policies. Additionally, the DoD QSM version 5.3 has been followed for these samples, and specifically Table B-15 was followed for all PFAS samples. Any exceptions to the QAMP, SOPs, NELAC standards, the DoD QSM, or policies are qualified on the results page or discussed below.

All QC associated with these samples was in compliance with DOD QSM 5.3 table B-15 and our PFAS SOP.

Correction factors (CF) are used to calculate the original sample concentration. The CF is the inverse of the concentration factor (sample volume / extract final volume) times the dilution factor (DF). For undiluted analysis. For undiluted analysis, the extract is prepared for injection by adding 182 uL of sample extract + 8 uL of reagent water + 10 uL of internal standard solution to a polypropylene autosampler vial. An extra correction factor of 0.91 (182 uL / 200 uL = 0.91) applies. The CF is calculated as follows:

CF = DF * FV / Vo

FV is volume of extract (mL)
Vo is initial sample volume (mL)
DF is dilution factor. For undiluted analysis, DF = 1/0.91.

Sample concentration for aqueous samples: Concentration (ng/L) = Cs*CF,

$$C_{s} = \frac{\left(\frac{(A_{s} \times C_{is})}{A_{is}}\right) - B}{M1}$$

Where

C_s is on column concentration of target analyte in the sample (ng/L)
C_{is} is concentration of internal standard in the sample (ng/L)
A_s is peak response of target analyte in the sample
A_{is} is peak response of internal standard in the sample
M1 is the average RF from ICAL or the slope from linear regression ICAL
B is the y-intercept from the ICAL

SC DHEC No: 32010001 NELAC No: E87653 NC DENR No: 329 NC Field Parameters No: 5639

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

For sample XC12009-006, sample matrix prevented full volume from being extracted, precluding method mandated bottle rinse. Elution solvent was aliquoted directly into the reservoir, rinsing the inside. Surrogate recovery may be adversely affected.

Samples XC12009-002, XC12009-003 required centrifugation prior to extraction, due to excessive solids present in the samples. Centrifugation was performed following the PFAS Aqueous Centrifuge Protocol; samples were spiked with Surrogate (SUR; Extracted Internal Standard/EIS) and shaken vigorously before being poured into a conical bottle and centrifuged. The centrifuged aqueous sample was decanted back into the original sample bottle, off of the condensed solids remaining in the centrifuge bottle. Original sample bottle was rinsed as normal and centrifuge bottle was rinsed with 4mL of MeOH. Centrifuge bottle rinsate was added to the elution. Samples concentrated to <5mL and reconstituted to 5mL using MeOH by transfer pipet.

Surrogate recovery for the following samples was outside control limits: XC12009-001, XC12009-002, XC12009-003, XC12009-004, XC12009-006, XC12009-007, XC12009-010. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The method blank associated with prep batch 36434 contained analyte: 6:2 FTS greater than the method criteria. For the following sample there was an insufficient amount to perform a re-extraction or reanalysis: XC12009-003. The data has been reported.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for prep batch 36434 exceeded acceptance criteria for the following analytes: 6:2 FTS surrogate. The associated target analyte passed, therefore the data were reported: XC12009-003.

Sample Summary Tetra Tech

Lot Number: XC12009

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	STP1-SW0010-000.5-20220310	Aqueous	03/10/2022 0805	03/12/2022
002	FS1-SW0001-000.5-20220310	Aqueous	03/10/2022 0845	03/12/2022
003	STP1-SW0011-000.5-20220310	Aqueous	03/10/2022 0910	03/12/2022
004	STP1-SW0012-000.5-20220310	Aqueous	03/10/2022 1035	03/12/2022
005	STP1-SW0013-000.5-20220310	Aqueous	03/10/2022 1110	03/12/2022
006	STP1-SW0014-000.5-20220310	Aqueous	03/10/2022 1120	03/12/2022
007	STP1-SW0015-000.5-20220310	Aqueous	03/10/2022 1145	03/12/2022
800	STP1-EB-20220310-01	Aqueous	03/10/2022 1200	03/12/2022
009	STP1-FB-20220310-01	Aqueous	03/10/2022 1210	03/12/2022
010	STP1-FD-20220310-01	Aqueous	03/10/2022	03/12/2022

(10 samples)

Detection Summary Tetra Tech

Lot	Numbore	XC12009
LOI	number:	XC 12009

Sampl	e Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	STP1-SW0010-000.5-20220310	Aqueous	PFBS	PFAS by ID	2.0	I	ng/L	8
001	STP1-SW0010-000.5-20220310	Aqueous	PFPeS	PFAS by ID	1.2	I	ng/L	8
001	STP1-SW0010-000.5-20220310	Aqueous	PFHxS	PFAS by ID	12		ng/L	8
001	STP1-SW0010-000.5-20220310	Aqueous		PFAS by ID	6.7	Q	ng/L	8
001	STP1-SW0010-000.5-20220310	Aqueous		PFAS by ID	2.2	I	ng/L	8
001	STP1-SW0010-000.5-20220310	Aqueous	•	PFAS by ID	3.7		ng/L	8
001	STP1-SW0010-000.5-20220310	Aqueous		PFAS by ID	4.6		ng/L	8
001	STP1-SW0010-000.5-20220310	Aqueous		PFAS by ID	3.7		ng/L	8
001	STP1-SW0010-000.5-20220310	Aqueous	PFOS	PFAS by ID	9.4		ng/L	8
002	FS1-SW0001-000.5-20220310	Aqueous	8:2 FTS	PFAS by ID	470	D	ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous		PFAS by ID	2700	D	ng/L	10
002	FS1-SW0001-000.5-20220310	•	MeFOSAA	PFAS by ID	50		ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous		PFAS by ID	79		ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous		PFAS by ID	3.9	Q	ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous		PFAS by ID	130		ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous	PFNS	PFAS by ID	23	Q	ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous	PFPeS	PFAS by ID	140		ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous	PFHxS	PFAS by ID	3300	D	ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous		PFAS by ID	270	Q	ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous		PFAS by ID	18		ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous		PFAS by ID	480	D	ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous	PFHxA	PFAS by ID	1000	D	ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous	PFNA	PFAS by ID	110		ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous	PFOA	PFAS by ID	1200	D	ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous	PFPeA	PFAS by ID	1000	D	ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous	PFUdA	PFAS by ID	2.1	I	ng/L	10
002	FS1-SW0001-000.5-20220310	Aqueous	PFOS	PFAS by ID	14000	D	ng/L	10
003	STP1-SW0011-000.5-20220310	Aqueous	8:2 FTS	PFAS by ID	9.8		ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	6:2 FTS	PFAS by ID	87	V	ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFBS	PFAS by ID	13		ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFHpS	PFAS by ID	11		ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFNS	PFAS by ID	1.4	I	ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFPeS	PFAS by ID	23		ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFHxS	PFAS by ID	340	D	ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFBA	PFAS by ID	26	Q	ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFDA	PFAS by ID	3.0	1	ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFHpA	PFAS by ID	46		ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFHxA	PFAS by ID	76		ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFNA	PFAS by ID	20		ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFOA	PFAS by ID	58		ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFPeA	PFAS by ID	87		ng/L	12
003	STP1-SW0011-000.5-20220310	Aqueous	PFOS	PFAS by ID	1200	D	ng/L	12
004	STP1-SW0012-000.5-20220310	Aqueous	PFBS	PFAS by ID	4.1		ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFDS	PFAS by ID	8.2		ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFHpS	PFAS by ID	1.0	I	ng/L	14

Detection Summary (Continued)

Lot Number: XC12009

Sampl	e Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	STP1-SW0012-000.5-20220310	Aqueous	PFPeS	PFAS by ID	1.0	ĺ	ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFHxS	PFAS by ID	15		ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFBA	PFAS by ID	33		ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFDA	PFAS by ID	3.7	I	ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFHpA	PFAS by ID	25		ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFHxA	PFAS by ID	33		ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFNA	PFAS by ID	11		ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFOA	PFAS by ID	37		ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFPeA	PFAS by ID	41		ng/L	14
004	STP1-SW0012-000.5-20220310	Aqueous	PFOS	PFAS by ID	91		ng/L	14
005	STP1-SW0013-000.5-20220310	Aqueous	PFBS	PFAS by ID	1.9	I	ng/L	16
005	STP1-SW0013-000.5-20220310	Aqueous	PFPeS	PFAS by ID	0.96	1	ng/L	16
005	STP1-SW0013-000.5-20220310	Aqueous	PFHxS	PFAS by ID	4.5		ng/L	16
005	STP1-SW0013-000.5-20220310	Aqueous	PFBA	PFAS by ID	27		ng/L	16
005	STP1-SW0013-000.5-20220310	Aqueous	PFHpA	PFAS by ID	8.5		ng/L	16
005	STP1-SW0013-000.5-20220310	Aqueous	PFHxA	PFAS by ID	9.9		ng/L	16
005	STP1-SW0013-000.5-20220310	Aqueous	PFOA	PFAS by ID	5.8		ng/L	16
005	STP1-SW0013-000.5-20220310	Aqueous	PFPeA	PFAS by ID	6.6		ng/L	16
005	STP1-SW0013-000.5-20220310	Aqueous	PFOS	PFAS by ID	5.8		ng/L	16
006	STP1-SW0014-000.5-20220310	Aqueous	PFBS	PFAS by ID	8.4	IQ	ng/L	18
006	STP1-SW0014-000.5-20220310	Aqueous	PFHxS	PFAS by ID	6.6	IQ	ng/L	18
006	STP1-SW0014-000.5-20220310	Aqueous	PFBA	PFAS by ID	95	Q	ng/L	18
006	STP1-SW0014-000.5-20220310	Aqueous	PFHpA	PFAS by ID	17	Q	ng/L	18
006	STP1-SW0014-000.5-20220310	Aqueous	PFHxA	PFAS by ID	37	Q	ng/L	18
006	STP1-SW0014-000.5-20220310	Aqueous	PFOA	PFAS by ID	21	Q	ng/L	18
006	STP1-SW0014-000.5-20220310	Aqueous	PFPeA	PFAS by ID	25	Q	ng/L	18
006	STP1-SW0014-000.5-20220310	Aqueous	PFOS	PFAS by ID	11	IQ	ng/L	18
007	STP1-SW0015-000.5-20220310	Aqueous	PFBS	PFAS by ID	1.0	I	ng/L	20
007	STP1-SW0015-000.5-20220310	Aqueous	PFHxS	PFAS by ID	2.3	I	ng/L	20
007	STP1-SW0015-000.5-20220310	Aqueous	PFBA	PFAS by ID	19		ng/L	20
007	STP1-SW0015-000.5-20220310	Aqueous	PFHpA	PFAS by ID	3.6		ng/L	20
007	STP1-SW0015-000.5-20220310	Aqueous	PFHxA	PFAS by ID	8.3		ng/L	20
007	STP1-SW0015-000.5-20220310	Aqueous	PFOA	PFAS by ID	9.1		ng/L	20
007	STP1-SW0015-000.5-20220310	Aqueous	PFPeA	PFAS by ID	6.5		ng/L	20
007	STP1-SW0015-000.5-20220310	Aqueous	PFOS	PFAS by ID	9.5		ng/L	20
010	STP1-FD-20220310-01	Aqueous	PFBS	PFAS by ID	1.7	I	ng/L	26
010	STP1-FD-20220310-01	Aqueous	PFPeS	PFAS by ID	1.1	I	ng/L	26
010	STP1-FD-20220310-01	Aqueous	PFHxS	PFAS by ID	13		ng/L	26
010	STP1-FD-20220310-01	Aqueous	PFBA	PFAS by ID	6.4		ng/L	26
010	STP1-FD-20220310-01	Aqueous	PFHpA	PFAS by ID	2.3	I	ng/L	26
010	STP1-FD-20220310-01	Aqueous	PFHxA	PFAS by ID	4.4		ng/L	26
010	STP1-FD-20220310-01	Aqueous	PFOA	PFAS by ID	4.2		ng/L	26
010	STP1-FD-20220310-01	Aqueous		PFAS by ID	4.0		ng/L	26
010	STP1-FD-20220310-01	Aqueous	PFOS	PFAS by ID	8.7		ng/L	26

(89 detections)

Client: Tetra Tech

Description: STP1-SW0010-000.5-20220310

Date Sampled:03/10/2022 0805 Date Received: 03/12/2022

Laboratory ID: XC12009-001

Matrix: Aqueous

Run Prep Method SOP SPE

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/26/2022 1732 ASD

Prep Date 03/24/2022 1128 35925

Batch

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.0	I	3.6	1.8	0.91	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.2	I	3.6	1.8	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	12		3.6	1.8	0.91	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	6.7	Q	3.6	1.8	0.91	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.2	1	3.6	1.8	0.91	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	3.7		3.6	1.8	0.91	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	4.6		3.6	1.8	0.91	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	3.7		3.6	1.8	0.91	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	9.4		3.6	1.8	0.91	ng/L	1
		otance mits							
13C2_4:2FTS N 2	206 50)-150							
13C2_6:2FTS N	171 50	-150							
13C2_8:2FTS	117 50	-150							
13C2_PFDoA	89 50)-150							
13C2_PFTeDA	78 50)-150							
13C3_PFBS	81 50)-150							
13C3_PFHxS	98 50	-150							
13C3-HFPO-DA	81 50	-150							
13C4_PFBA N	46 50	-150							
13C4_PFHpA	100 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

96

76

99

93

50-150

50-150

50-150

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Description: STP1-SW0010-000.5-20220310

Date Sampled:03/10/2022 0805 Date Received: 03/12/2022

Laboratory ID: XC12009-001

Matrix: Aqueous

Surrogate	Run 1 A Q % Recovery	Acceptance Limits
13C8_PFOA	95	50-150
13C8_PFOS	100	50-150
13C9_PFNA	103	50-150
d-EtFOSA	65	50-150
d5-EtFOSAA	96	50-150
d3-MeFOSAA	101	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

N = Recovery is out of criteria W = Reported on wet weight basis

P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: FS1-SW0001-000.5-20220310

Date Sampled:03/10/2022 0845 Date Received:03/12/2022 Laboratory ID: XC12009-002

Matrix: Aqueous

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

I = Estimated result < LOQ and \geq DL

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/26/2022 1804 ASD	03/24/2022 1128 35925
2	SOP SPE	PFAS by ID SOP QSM B-15	50	03/30/2022 1251 ASD	03/24/2022 1128 35925

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	470	D	370	190	92	ng/L	2
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	2700	D	370	190	92	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	QU	7.3	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	50		7.3	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	79		3.7	1.9	0.92	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	3.9	Q	3.7	1.9	0.92	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	130		3.7	1.9	0.92	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	23	Q	3.7	1.9	0.92	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	140		3.7	1.9	0.92	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	3300	D	180	90	46	ng/L	2
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	270	Q	3.7	1.9	0.92	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	18		3.7	1.9	0.92	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	480	D	180	90	46	ng/L	2
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1000	D	180	90	46	ng/L	2
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	110		3.7	1.9	0.92	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1200	D	180	90	46	ng/L	2
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1000	D	180	90	46	ng/L	2
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.7	1.9	0.92	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	2.1	1	3.7	1.9	0.92	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	14000	D	180	90	46	ng/L	2
		otance F	Run 2 Ac Recovery	ceptance Limits					
		nits Q % F -150	96	50-150					
		-150	89	50-150					
_		-150	96	50-150					
		-150	94	50-150					
-		-150	94	50-150					
_		-150	95	50-150					
		-150 150	92 91	50-150 50-150					
		-150 -150	91 96	50-150 50-150					
		- 150 - 150	95 95	50-150					
		- 150 -150	95 95	50-150					
		-150 150	97	50-150					
13C6_PFDA	92 50	-150	96	50-150					

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range DL = Detection Limit

P = The RPD between two GC columns exceeds 40%

Client: Tetra Tech

Description: FS1-SW0001-000.5-20220310

Date Sampled:03/10/2022 0845 Date Received:03/12/2022 Laboratory ID: XC12009-002 Matrix: Aqueous

Surrogate	Q	Run 1 % Recovery	Acceptance Limits Q	Run 2 A % Recovery	cceptance Limits
13C7_PFUdA		95	50-150	98	50-150
13C8_PFOA		82	50-150	89	50-150
13C8_PFOS	N	46	50-150	92	50-150
13C9_PFNA		50	50-150	90	50-150
d-EtFOSA		58	50-150	94	50-150
d5-EtFOSAA		105	50-150	96	50-150
d3-MeFOSAA		101	50-150	93	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: STP1-SW0011-000.5-20220310

Date Sampled:03/10/2022 0910
Date Received: 03/12/2022

Laboratory ID: XC12009-003

Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/26/2022 1815 ASD	03/24/2022 1128	35925
2	SOP SPE	PFAS by ID SOP QSM B-15	10	03/29/2022 1859 MMM	03/24/2022 1128	35925
3	SOP SPE	PFAS by ID SOP QSM B-15	1	03/30/2022 2307 MMM	03/29/2022 1803	36434

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	9.8		7.3	3.7	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	87	V	8.3	4.2	2.1	ng/L	3
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.7	UQ	7.3	3.7	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.7	U	7.3	3.7	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	13		3.6	1.8	0.91	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	11		3.6	1.8	0.91	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.4	I	3.6	1.8	0.91	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	23		3.6	1.8	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	340	D	36	18	9.1	ng/L	2
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	26	Q	3.6	1.8	0.91	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	3.0	I	3.6	1.8	0.91	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	46		3.6	1.8	0.91	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	76		3.6	1.8	0.91	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	20		3.6	1.8	0.91	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	58		3.6	1.8	0.91	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	87		3.6	1.8	0.91	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.91	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1200	D	36	18	9.1	ng/L	2

Q %		cceptance Limits	Q	Run 2 Ac % Recovery	cceptance Limits	Q	Run 3 % Recovery	Acceptance Limits
N	185	50-150		110	50-150		113	50-150
N	153	50-150		117	50-150		122	50-150
	118	50-150		88	50-150		59	50-150
	86	50-150		87	50-150	N	6.8	50-150
	65	50-150		63	50-150	N	0.30	50-150
	79	50-150		97	50-150		63	50-150
	90	50-150		93	50-150		58	50-150
	80	50-150		98	50-150		56	50-150
N	48	50-150		97	50-150	N	43	50-150
	92	50-150		90	50-150		59	50-150
	93	50-150		97	50-150		62	50-150
	76	50-150		93	50-150		62	50-150
	N N	Q % Recovery N 185 N 153 118 86 65 79 90 80 N 48 92 93	Q % Recovery Limits N 185 50-150 N 153 50-150 118 50-150 86 50-150 65 50-150 79 50-150 90 50-150 80 50-150 N 48 50-150 92 50-150 93 50-150	Q % Recovery Limits Q N 185 50-150 N 153 50-150 118 50-150 86 50-150 65 50-150 79 50-150 90 50-150 80 50-150 N 48 50-150 92 50-150 93 50-150	Q % Recovery Limits Q % Recovery N 185 50-150 110 N 153 50-150 117 118 50-150 88 86 50-150 87 65 50-150 63 79 50-150 97 90 50-150 93 80 50-150 98 N 48 50-150 90 93 50-150 97	Q % Recovery Limits Q % Recovery Limits N 185 50-150 110 50-150 N 153 50-150 117 50-150 118 50-150 88 50-150 86 50-150 87 50-150 65 50-150 63 50-150 79 50-150 97 50-150 90 50-150 93 50-150 80 50-150 98 50-150 N 48 50-150 97 50-150 92 50-150 90 50-150 93 50-150 97 50-150	Q % Recovery Limits Q % Recovery Limits Q N 185 50-150 110 50-150 N 153 50-150 117 50-150 118 50-150 88 50-150 86 50-150 87 50-150 N 65 50-150 63 50-150 N 79 50-150 97 50-150 9 90 50-150 93 50-150 N 80 50-150 98 50-150 N 92 50-150 90 50-150 N 93 50-150 97 50-150 N	Q % Recovery Limits Q % Recovery Limits Q % Recovery N 185 50-150 110 50-150 113 N 153 50-150 117 50-150 122 118 50-150 88 50-150 59 86 50-150 87 50-150 N 6.8 65 50-150 63 50-150 N 0.30 79 50-150 97 50-150 58 80 50-150 98 50-150 56 N 48 50-150 97 50-150 N 43 92 50-150 90 50-150 59 59 50-150 59 93 50-150 97 50-150 59 59 50-150 59

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \ge DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionS = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: STP1-SW0011-000.5-20220310

Date Sampled:03/10/2022 0910 Date Received: 03/12/2022

Laboratory ID: XC12009-003

Matrix: Aqueous

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 A % Recovery	cceptance Limits	Q	Run 3 % Recovery	Acceptance Limits
13C6_PFDA		93	50-150		103	50-150	N	47	50-150
13C7_PFUdA		87	50-150		99	50-150	Ν	22	50-150
13C8_PFOA		94	50-150		96	50-150		64	50-150
13C8_PFOS		83	50-150		103	50-150	Ν	43	50-150
13C9_PFNA		86	50-150		95	50-150		53	50-150
d-EtFOSA		58	50-150		66	50-150	N	0.30	50-150
d5-EtFOSAA		91	50-150		98	50-150	Ν	30	50-150
d3-MeFOSAA		96	50-150		96	50-150	N	48	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

N = Recovery is out of criteria W = Reported on wet weight basis

P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: STP1-SW0012-000.5-20220310

Date Sampled:03/10/2022 1035 Date Received:03/12/2022 Laboratory ID: XC12009-004

Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date I	Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	03/26/2022 1826 ASD	03/24/2022 1128	35925

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.9	U	7.7	3.9	1.9	ng/L	1
$\hbox{11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)}$	763051-92-9	PFAS by ID SOP	3.9	U	7.7	3.9	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.9	U	7.7	3.9	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.9	U	7.7	3.9	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.9	UQ	7.7	3.9	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.9	U	7.7	3.9	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.9	U	7.7	3.9	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.9	U	7.7	3.9	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.9	U	7.7	3.9	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.9	U	7.7	3.9	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	4.1		3.8	1.9	0.96	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	8.2		3.8	1.9	0.96	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.0	1	3.8	1.9	0.96	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.96	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.0	1	3.8	1.9	0.96	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	15		3.8	1.9	0.96	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	33		3.8	1.9	0.96	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	3.7	1	3.8	1.9	0.96	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.96	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	25		3.8	1.9	0.96	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	33		3.8	1.9	0.96	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	11		3.8	1.9	0.96	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	37		3.8	1.9	0.96	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	41		3.8	1.9	0.96	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.8	1.9	0.96	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.96	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.96	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	91		3.8	1.9	0.96	ng/L	1
		otance nits							
13C2_4:2FTS N 2	201 50	-150							
13C2_6:2FTS 1	135 50	-150							
13C2_8:2FTS	95 50	-150							
13C2_PFDoA	83 50	-150							
13C2_PFTeDA	68 50	-150							
13C3_PFBS	79 50	-150							
	93 50	-150							
13C3-HFPO-DA	84 50	-150							
		-150							
		-150							
•		-150							
		-150							
		-150							
_	00	-							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

83

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: STP1-SW0012-000.5-20220310

Date Sampled:03/10/2022 1035 Date Received:03/12/2022 Laboratory ID: XC12009-004

Matrix: Aqueous

Surrogate	Run 1 A Q % Recovery	cceptance Limits	
13C8_PFOA	94	50-150	
13C8_PFOS	93	50-150	
13C9_PFNA	91	50-150	
d-EtFOSA	74	50-150	
d5-EtFOSAA	90	50-150	
d3-MeFOSAA	87	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

 $\label{thm:pace-analytical-Services, LLC} \mbox{ (formerly Shealy Environmental Services, Inc.)}$

Client: Tetra Tech

Description: STP1-SW0013-000.5-20220310

Date Sampled:03/10/2022 1110 Date Received:03/12/2022 Laboratory ID: XC12009-005

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/26/2022 1837 ASD 03/24/2022 1128 35925

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)) 763051-92-9	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.8	U	7.6	3.8	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	1	3.8	1.9	0.95	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	0.96	I	3.8	1.9	0.95	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	4.5		3.8	1.9	0.95	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	27		3.8	1.9	0.95	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	8.5		3.8	1.9	0.95	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	9.9		3.8	1.9	0.95	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	5.8		3.8	1.9	0.95	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	6.6		3.8	1.9	0.95	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.95	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	5.8		3.8	1.9	0.95	ng/L	1
Surrogate R Q % Re		otance mits							
_		-150							
		-150							
13C2_8:2FTS	76 50	-150							
13C2_PFDoA	66 50	-150							
13C2_PFTeDA	55 50	-150							
13C3_PFBS	84 50	-150							
13C3_PFHxS	90 50	-150							
13C3-HFPO-DA	90 50	-150							
13C4_PFBA	67 50	-150							
13C4_PFHpA	98 50	-150							
13C5_PFHxA	103 50	-150							
13C5_PFPeA	90 50	-150							
13C6_PFDA	80 50	-150							
13C7_PFUdA	67 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: STP1-SW0013-000.5-20220310

Date Sampled:03/10/2022 1110 Date Received:03/12/2022 Laboratory ID: XC12009-005 Matrix: Aqueous

Run 1 Acceptance Surrogate Q % Recovery Limits 13C8_PFOA 50-150 13C8_PFOS 50-150 85 13C9_PFNA 91 50-150 d-EtFOSA 71 50-150 d5-EtFOSAA 82 50-150 d3-MeFOSAA 77 50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

 $E = Quantitation \ of \ compound \ exceeded \ the \ calibration \ range$ $P = The \ RPD \ between \ two \ GC \ columns \ exceeds \ 40\%$ $LOD = Limit \ of \ Detection$

DL = Detection Limit I = Estimated result < LOQ and $\geq DL$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: STP1-SW0014-000.5-20220310

Date Sampled:03/10/2022 1120
Date Received:03/12/2022

Laboratory ID: XC12009-006

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/26/2022 1848 ASD 03/24/2022 1128 35925

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	16	UQ	31	16	7.7	ng/L	1
${\it 11-chloroeicos afluoro-3-oxaunde cane-1-sulfonic\ acid\ (11Cl-PF3}$.) 763051-92-9	PFAS by ID SOP	16	UQ	31	16	7.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	16	UQ	31	16	7.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	16	UQ	31	16	7.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	16	UQ	31	16	7.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	16	UQ	31	16	7.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	16	UQ	31	16	7.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	16	UQ	31	16	7.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	16	UQ	31	16	7.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	16	UQ	31	16	7.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	8.4	IQ	15	7.5	3.8	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	7.5	UQ	15	7.5	3.8	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	7.5	UQ	15	7.5	3.8	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	7.5	UQ	15	7.5	3.8	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	7.5	UQ	15	7.5	3.8	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	6.6	IQ	15	7.5	3.8	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	95	Q	15	7.5	3.8	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	7.5	UQ	15	7.5	3.8	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	7.5	UQ	15	7.5	3.8	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	17	Q	15	7.5	3.8	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	37	Q	15	7.5	3.8	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	7.5	UQ	15	7.5	3.8	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	21	Q	15	7.5	3.8	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	25	Q	15	7.5	3.8	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	7.5	UQ	15	7.5	3.8	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	7.5	UQ	15	7.5	3.8	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	7.5	UQ	15	7.5	3.8	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	11	IQ	15	7.5	3.8	ng/L	1
	Run 1 Accer	otance							
Surrogate Q % Re	ecovery Lir	mits							
13C2_4:2FTS N)-150							
13C2_6:2FTS N)-150							
13C2_8:2FTS N)-150							
13C2_PFDoA N)-150							
13C2_PFTeDA N	24 50)-150							
13C3_PFBS N)-150							
13C3_PFHxS N)-150							
13C3-HFPO-DA N	25 50	-150							
13C4_PFBA N		-150							
13C4_PFHpA N)-150							
13C5_PFHxA N		-150							
13C5_PFPeA N	26 50	-150							
100/ DEDA		450							

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13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

29

28

50-150

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: STP1-SW0014-000.5-20220310

Date Sampled:03/10/2022 1120 Date Received: 03/12/2022

Laboratory ID: XC12009-006

Matrix: Aqueous

	Surrogate	Q	Run 1 A % Recovery	Acceptance Limits				
•	13C8_PFOA	N	28	50-150				
	13C8_PFOS	Ν	27	50-150				
	13C9_PFNA	N	26	50-150				
	d-EtFOSA	Ν	25	50-150				
	d5-EtFOSAA	Ν	32	50-150				
	d3-MeFOSAA	Ν	30	50-150				

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

N = Recovery is out of criteria W = Reported on wet weight basis

P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: STP1-SW0015-000.5-20220310

Date Sampled:03/10/2022 1145 Date Received:03/12/2022 Laboratory ID: XC12009-007

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 03/26/2022 1859 ASD 03/24/2022 1128 35925

11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid (CICIPF3) 763951-92-9 PFAS by ID SOP 36 U 7.2 3.6 1.8 ng/L	Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
H. 1H. 2H. 2H-perfluorodecane sulfonic acid (6.2 FTS) 39108-344 PAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L H. 1H. 2H. 2H-perfluorodecane sulfonic acid (6.2 FTS) 77617-97-2 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L H. 1H. 1H. 2H-2H-perfluorodecane sulfonic acid (6.2 FTS) 77617-97-2 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L Hexafluoropropylene coded dimer acid (Centrol) 13252-13-6 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L Hexafluoropropylene coded dimer acid (Centrol) 13252-13-6 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L N-elhylperfluoro-1-octanesulfonamidaceidc acid (EIFOSA) 2991-50-6 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L N-elhylperfluoro-1-octanesulfonamidaceidc acid (EIFOSA) 2991-50-6 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L N-elhylperfluoro-1-octanesulfonic acid (FFES) 375-73-5 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L N-elhylperfluoro-1-decanesulfonic acid (FFES) 375-73-5 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L N-elhylperfluoro-1-decanesulfonic acid (FFES) 375-73-5 PFAS by ID SOP 1.0 I 3.6 1.8 0.90 ng/L N-elhuro-1-decanesulfonic acid (FFES) 375-73-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L N-elhuro-1-decanesulfonic acid (FFES) 275-73 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L N-elhuro-1-nonamesulfonic acid (FFES) 375-73-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L N-elhuro-1-nonamesulfonic acid (FFES) 375-73-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L N-elhuro-1-decaneic acid (FFES) 375-73-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L N-elhuro-1-nonamesulfonic acid (FFES) 375-73-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L N-elhuro-1-nonamesulfonic acid (FFES) 375-73-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L N-elhuro-1-nonamesulfonic acid (FFESA) 375-73-5 PFAS by ID SOP 3.6 U 3.6 1.8 0.90 ng/L N-elhuro-1-nonamesulfonic acid (FFESA) 375-73-5	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11.1 11.1 21.1	${\it 11-chloroeicos afluoro-3-oxaunde cane-1-sulfonic\ acid\ (11Cl-PF3)}$	763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11.1 H.2 H.2 H perfluorochexane sulfonic acid (4 2 FTS)	1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (Genx)	1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4.8-dloxa 3H-perfluorononanoic acid (ADONA) 919005-14-4 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L Nethylperfluoro1-octanesulfonamide (EIFOSA) 4151-502 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L Nethylperfluoro1-octanesulfonamide acid (EIFOSA) 2991-506 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L Nethylperfluoro1-octanesulfonamidoacetic acid (MeFOSAA) 2355-31-9 PFAS by ID SOP 3.6 U 7.2 3.6 1.8 ng/L Nethylperfluoro1-octanesulfonamidoacetic acid (MeFOSAA) 2355-31-9 PFAS by ID SOP 1.0 I 3.6 1.8 0.90 ng/L Perfluoro1-octanesulfonic acid (PFBS) 3757-35 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptanesulfonic acid (PFBS) 3757-35 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptanesulfonic acid (PFBS) 3759-24 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptanesulfonic acid (PFBS) 7706-91-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-nonamesulfonic acid (PFBS) 3759-24 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptanesulfonic acid (PFBS) 375-22-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptanesulfonic acid (PFBA) 375-22-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptanesulfonic acid (PFBA) 375-22-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptanesulfonic acid (PFBA) 375-22-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptaneloc acid (PFBA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptaneloc acid (PFBA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptaneloc acid (PFBA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptaneloc acid (PFBA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptaneloc acid (PFBA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptaneloc acid (PFBA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptaneloc acid (PFBA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptaneloc acid (PFBA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptanelocacid acid (PFBA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro1-heptanelocacid acid (PFBA	1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
N-athylperfluoro-1-octanesulfonamide (EFOSA)	Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EFOSAA)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSA) Perfluoro-1-butanesulfonic acid (PFBS) Signal Spiral Spi	N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS) 375-73-5 PFAS by ID SOP 1.0 1 3.6 1.8 0.90 ng/L Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-1-heptanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-1-pentanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-1-pentanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-1-pentanesulfonic acid (PFNS) 355-46-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-1-pentanesulfonic acid (PFNS) 355-46-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-butanoic acid (PFDA) 375-52-2 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 375-52-2 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFNA) 375-52-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-hexanoic acid (PFNA) 375-52-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFNA) 375-52-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFNA) 375-52-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFNA) 375-52-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFPA) 375-52-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFNA) 375-52-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFNA) 375-52-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFNA) 375-52-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFNA) 375-52-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFNA) 375-52-5 PFAS by ID SOP 3.6 U 3.6 U 3.6 U 3.6 U	N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS) 335-77-3 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L	N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS) 68259-12-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-1-pontanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-1-pontanesulfonic acid (PFNS) 355-46-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-betanesulfonic acid (PFNS) 355-46-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-betanesulfonic acid (PFNS) 355-46-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-betanesulfonic acid (PFNS) 375-22-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 375-22-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 375-25-5 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-betanoic acid (PFNA) 375-85-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-heptanoic acid (PFNA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-heptanoic acid (PFNA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-heptanoic acid (PFNA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-heptanoic acid (PFNA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-heptanoic acid (PFNA) 375-85-9 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pontanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-pontanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-tetradecanoic acid (PFDA) 376-97-3 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-tetradecanoic acid (PFTEDA) 376-97-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-tetradecanoic acid (PFTEDA) 376-97-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-tetradecanoic acid (PFTEDA) 376-97-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L PERFluoro-n-tetradecanoic acid (PFTEDA) 376-97-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L PERFluoro-n-tetradecanoic acid (PFTEDA) 376-97-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L PERFluoro-n-tetradecanoic acid (PFTEDA) 376-07-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L PERFluoro-n-tetradecanoic acid (PFTEDA) 3.6 1.8 0.90 ng/L PERFluoro-n-tetradecanoic a	Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.0	1	3.6	1.8	0.90	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS) 68259-12-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-butanoic acid (PFBAS) 375-22-4 PFAS by ID SOP 2.3 I 3.6 1.8 0.90 ng/L Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 19 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 375-85-9 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 375-85-9 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-hexanoic acid (PFDA) 375-85-9 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-hexanoic acid (PFDA) 375-85-9 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-hexanoic acid (PFDA) 375-85-9 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-bexanoic acid (PFDA) 375-85-1 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-ctanoic acid (PFDA) 375-85-1 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-ctanoic acid (PFDA) 375-95-1 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-detanoic acid (PFDA) 376-06-7 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-detanoic acid (PFDA) 376-06-7 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 376-06-7 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 376-06-7 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 2058-94-8 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 2058-94-8 PFAS by ID SOP 18 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 2058-94-8 PFAS by ID SOP 205 U 3.6 1.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 2058-94-8 PFAS by ID SOP 205 U 3.6 0.8 0.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 2058-94-8 PFAS by ID SOP 205 U 3.6 0.8 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 2058-94-8 PFAS by ID SOP 205 U 3.0 0.90 ng/L Perfluoro-n-decanoic acid (PFDA) 205 U 3.0 0.90 ng/L PERFLOORUS 205 U 3.0 0.90 ng/L PE	Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS) 2706-91-4 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L	Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoron-batanoic acid (PFHxS) 355-46-4 PFAS by ID SOP 2.3 1 3.6 1.8 0.90 ng/L	Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-butanoic acid (PFBA) 375-22-4 PFAS by ID SOP 19 3.6 1.8 0.90 ng/L	Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-decanoic acid (PFDA) 335-76-2 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	2.3	I	3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDA) 307-55-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L	Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	19		3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA) 375-85-9 PFAS by ID SOP 3.6 3.6 1.8 0.90 ng/L	Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA) 307-24-4 PFAS by ID SOP 8.3 3.6 1.8 0.90 ng/L	Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-nonanoic acid (PFNA) 375-95-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 9.1 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFPA) 2706-90-3 PFAS by ID SOP 6.5 3.6 1.8 0.90 ng/L Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-tridecanoic acid (PFTDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-tridecanoic acid (PFTDA) PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFUA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0.90 ng/L Perfluoroctanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0.90 ng/L PERFLUOROCTANESULFORIC SURFORM STANDARD SURFORM SURF	Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	3.6		3.6	1.8	0.90	ng/L	1
Perfluoro-n-octanoic acid (PFOA) 335-67-1 PFAS by ID SOP 9.1 3.6 1.8 0.90 ng/L Perfluoro-n-pentanoic acid (PFPA) 2706-90-3 PFAS by ID SOP 6.5 3.6 1.8 0.90 ng/L Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-tridecanoic acid (PFTeDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluorocatanesulfonic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0.90 ng/L Surrogate Q % Recovery Limits 302_4:2FTS N 165 50-150 1302_6:2FTS 126 50-150 1302_PFDOA 79 50-150 1302_PFEDA 61 50-150 1302_PFEDA 61 50-150 1303_PFBS 86 50-150 1303_PFBS 86 50-150 1303_PFHXS 99 50-150 1303_PFHXS 99 50-150 1304_PFBA 63 50-150 1304_PFBA 63 50-150 1304_PFBA 63 50-150 1304_PFBA 63 50-150 1305_PFHXA 101 50-150	Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	8.3		3.6	1.8	0.90	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA) 2706-90-3 PFAS by ID SOP 6.5 3.6 1.8 0.90 ng/L Perfluoro-n-tetradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-tridecanoic acid (PFTeDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0.90 ng/L PFAS by ID SOP 9.5 3.6 1.8 0.90	Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-letradecanoic acid (PFTeDA) 376-06-7 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-tridecanoic acid (PFTrDA) 72629-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFUdA) 2058-94-8 PFAS by ID SOP 1.8 U 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0.90 ng/L Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0.90 ng/L PERFLUORD-CALLED SOP 9.5 3.6 1.	Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	9.1		3.6	1.8	0.90	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA) Perfluoro-n-tridecanoic acid (PFUdA) Perfluoro-n-undecanoic acid (PFUdA) Perfluoro-n-undecanoic acid (PFUdA) Perfluoro-n-undecanoic acid (PFOS) Perf Supplied Su	Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	6.5		3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA) Perfluoro-n-undecanoic acid (PFUdA) Perfluoro-n-undecanoic acid (PFOS) 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0,90 ng/L 1763-23-1 PFAS by ID SOP 9.5 3.6 1.8 0,90 ng/L 3.6 1.8	Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Surrogate Q Run 1 Acceptance Limits 13C2_4:2FTS N 165 50-150 13C2_6:2FTS 126 50-150 13C2_8:2FTS 97 50-150 13C2_PFDOA 79 50-150 13C2_PFTeDA 61 50-150 13C3_PFBS 86 50-150 13C3_PFHxS 99 50-150 13C3_HFPO-DA 90 50-150 13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Surrogate Q % Recovery Limits 13C2_4:2FTS N 165 50-150 13C2_6:2FTS 126 50-150 13C2_8:2FTS 97 50-150 13C2_PFDoA 79 50-150 13C2_PFTeDA 61 50-150 13C3_PFBS 86 50-150 13C3_PFHxS 99 50-150 13C3_HFPO-DA 90 50-150 13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	9.5		3.6	1.8	0.90	ng/L	1
13C2_4:2FTS N 165 50-150 13C2_6:2FTS 126 50-150 13C2_8:2FTS 97 50-150 13C2_PFDoA 79 50-150 13C2_PFTeDA 61 50-150 13C3_PFBS 86 50-150 13C3_PFHxS 99 50-150 13C3-HFPO-DA 90 50-150 13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	Surrogate RI	un 1 Accep								
13C2_6:2FTS 126 50-150 13C2_8:2FTS 97 50-150 13C2_PFDoA 79 50-150 13C2_PFTeDA 61 50-150 13C3_PFBS 86 50-150 13C3_PFHxS 99 50-150 13C3-HFPO-DA 90 50-150 13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150										
13C2_PFDoA 79 50-150 13C2_PFTeDA 61 50-150 13C3_PFBS 86 50-150 13C3_PFHxS 99 50-150 13C3_HFPO-DA 90 50-150 13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	_									
13C2_PFDoA 79 50-150 13C2_PFTeDA 61 50-150 13C3_PFBS 86 50-150 13C3_PFHxS 99 50-150 13C3-HFPO-DA 90 50-150 13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	13C2_8:2FTS	97 50	-150							
13C2_PFTeDA 61 50-150 13C3_PFBS 86 50-150 13C3_PFHxS 99 50-150 13C3-HFPO-DA 90 50-150 13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	13C2_PFDoA									
13C3_PFBS 86 50-150 13C3_PFHxS 99 50-150 13C3-HFPO-DA 90 50-150 13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	13C2_PFTeDA									
13C3_PFHxS 99 50-150 13C3_HFPO-DA 90 50-150 13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	13C3_PFBS									
13C3-HFPO-DA 90 50-150 13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	13C3_PFHxS									
13C4_PFBA 63 50-150 13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	13C3-HFPO-DA									
13C4_PFHpA 97 50-150 13C5_PFHxA 101 50-150	13C4 PFBA									
13C5_PFHxA 101 50-150	13C4_PFHpA									
	_ ·									
	13C5_PFPeA									

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

90

86

50-150

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: STP1-SW0015-000.5-20220310

Date Sampled:03/10/2022 1145 Date Received:03/12/2022 Laboratory ID: XC12009-007

Matrix: Aqueous

Surrogate	Run 1 A Q % Recovery	cceptance Limits	
13C8_PFOA	97	50-150	
13C8_PFOS	100	50-150	
13C9_PFNA	97	50-150	
d-EtFOSA	81	50-150	
d5-EtFOSAA	95	50-150	
d3-MeFOSAA	93	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

 $\label{thm:pace-analytical-Services, LLC} \mbox{ (formerly Shealy Environmental Services, Inc.)}$

Client: Tetra Tech

Description: STP1-EB-20220310-01

Date Sampled:03/10/2022 1200 Date Received:03/12/2022

SOP SPE

Run Prep Method

1

Matrix: Aqueous

Laboratory ID: XC12009-008

Analytical Method Dilution Analysis Date Analyst Prep Date Batch
PFAS by ID SOP QSM B-15 1 03/26/2022 1910 ASD 03/24/2022 1128 35925

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
$\hbox{11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)}\\$	763051-92-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
		otance mits							
		-150							
13C2_6:2FTS	121 50	-150							
13C2_8:2FTS	96 50	-150							
13C2_PFDoA	92 50	-150							
13C2_PFTeDA	90 50	-150							
13C3_PFBS	85 50	-150							
13C3_PFHxS	90 50	-150							
13C3-HFPO-DA	90 50	-150							
13C4_PFBA	93 50	-150							
13C4_PFHpA	94 50	-150							
13C5_PFHxA	99 50	-150							

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13C5_PFPeA

13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

98

93

87

50-150

50-150

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: STP1-EB-20220310-01
Date Sampled:03/10/2022 1200
Date Received: 03/12/2022

Laboratory ID: XC12009-008

Matrix: Aqueous

Surrogate	Run 1 Acceptance Q % Recovery Limits	
13C8_PFOA	98 50-150	
13C8_PFOS	97 50-150	
13C9_PFNA	92 50-150	
d-EtFOSA	80 50-150	
d5-EtFOSAA	90 50-150	
d3-MeFOSAA	89 50-150	

LOQ = Limit of Quantitation
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Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: STP1-FB-20220310-01 Date Sampled:03/10/2022 1210

Date Received: 03/12/2022

Run Prep Method SOP SPE

Analytical Method Dilution PFAS by ID SOP QSM B-15

Analysis Date Analyst 03/26/2022 1921 ASD

Analytical

CAS

Prep Date

Batch

Laboratory ID: XC12009-009

Matrix: Aqueous

03/24/2022 1128	35925	

Parameter	Number	Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
		otance mits							
13C2_4:2FTS		-150							
		-150							
13C2_8:2FTS		-150							
13C2 PFDoA		-150							
13C2_PFTeDA	88 50	-150							
13C3_PFBS		-150							
13C3_PFHxS	92 50	-150							
13C3-HFPO-DA		-150							
		-150							
13C4_PFHpA		-150							
13C5_PFHxA		-150							
13C5_PFPeA		-150							
13C6_PFDA		-150							
	. 00								

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13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

89

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: STP1-FB-20220310-01
Date Sampled:03/10/2022 1210
Date Received: 03/12/2022

Laboratory ID: XC12009-009

Matrix: Aqueous

Surrogate	Run 1 A Q % Recovery	cceptance Limits
13C8_PFOA	102	50-150
13C8_PFOS	95	50-150
13C9_PFNA	96	50-150
d-EtFOSA	63	50-150
d5-EtFOSAA	88	50-150
d3-MeFOSAA	94	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: STP1-FD-20220310-01

Date Sampled:03/10/2022
Date Received:03/12/2022

Laboratory ID: XC12009-010

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch 1 SOP SPE PFAS by ID SOP QSM B-15 03/26/2022 1932 ASD 03/24/2022 1128 35925 2 SOP SPE PFAS by ID SOP QSM B-15 1 03/30/2022 2318 MMM 03/29/2022 1803 36434

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS	5) 756426-58-1	PFAS by ID SOP	3.4	U	6.8	3.4	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3) 763051-92-9	PFAS by ID SOP	3.4	U	6.8	3.4	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.4	U	6.8	3.4	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.4	UQ	6.8	3.4	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.4	UQ	6.8	3.4	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.4	U	6.8	3.4	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.4	U	6.8	3.4	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.4	U	6.8	3.4	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.4	U	6.8	3.4	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.4	U	6.8	3.4	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SO	P 1.7	I	3.4	1.7	0.85	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.7	U	3.4	1.7	0.85	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.7	U	3.4	1.7	0.85	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.7	U	3.4	1.7	0.85	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SO	P 1.1	I	3.4	1.7	0.85	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SO	P 13		3.4	1.7	0.85	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SO	P 6.4		3.5	1.8	0.88	ng/L	2
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.7	U	3.4	1.7	0.85	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.7	U	3.4	1.7	0.85	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SO	2.3	1	3.4	1.7	0.85	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SO	P 4.4		3.4	1.7	0.85	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.7	U	3.4	1.7	0.85	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SO	P 4.2		3.4	1.7	0.85	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SO	P 4.0		3.4	1.7	0.85	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.7	U	3.4	1.7	0.85	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.7	U	3.4	1.7	0.85	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.7	U	3.4	1.7	0.85	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SO	P 8.7		3.4	1.7	0.85	ng/L	1
		ptance mits Q %	Run 2 Ac Recovery	ceptance Limits)				
13C2_4:2FTS N	190 50)-150 N	181	50-150					
13C2_6:2FTS N	167 50)-150 N	241	50-150					
13C2_8:2FTS	126 50)-150	125	50-150					
13C2_PFDoA	93 50)-150	83	50-150					
13C2_PFTeDA	79 50)-150	67	50-150					
13C3_PFBS	78 50)-150	91	50-150					
13C3_PFHxS	94 50)-150	100	50-150					
13C3-HFPO-DA	79 50)-150	81	50-150					
13C4_PFBA N	41 50)-150	52	50-150					
13C4_PFHpA	96 50)-150	93	50-150					

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

88

71

93

50-150

50-150

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

91

87

100

50-150

50-150

50-150

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

Client: Tetra Tech

Description: STP1-FD-20220310-01

Date Sampled:03/10/2022 Date Received: 03/12/2022 Laboratory ID: XC12009-010 Matrix: Aqueous

Surrogate	Run 1 Q % Recovery	Acceptance Limits Q	Run 2 A % Recovery	Acceptance Limits
13C7_PFUdA	90	50-150	92	50-150
13C8_PFOA	93	50-150	101	50-150
13C8_PFOS	98	50-150	97	50-150
13C9_PFNA	99	50-150	101	50-150
d-EtFOSA	69	50-150	64	50-150
d5-EtFOSAA	97	50-150	94	50-150
d3-MeFOSAA	98	50-150	109	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

N = Recovery is out of criteria W = Reported on wet weight basis

P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

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	QC Summ	ary	
	ces, Inc.) 00 Fax (803) 791-9111		

PFAS by LC/MS/MS - MB

Sample ID: XQ35925-001 Batch: 35925

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/24/2022 1128

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
9CI-PF3ONS	4.0	U	1	8.0	4.0	2.0	ng/L	03/26/2022 1710
11CI-PF3OUdS	4.0	U	1	8.0	4.0	2.0	ng/L	03/26/2022 1710
8:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/26/2022 1710
6:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/26/2022 1710
4:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	03/26/2022 1710
GenX	4.0	U	1	8.0	4.0	2.0	ng/L	03/26/2022 1710
ADONA	4.0	U	1	8.0	4.0	2.0	ng/L	03/26/2022 1710
EtFOSA	4.0	U	1	8.0	4.0	2.0	ng/L	03/26/2022 1710
EtFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	03/26/2022 1710
MeFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	03/26/2022 1710
PFBS	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFDS	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFHpS	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFNS	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFPeS	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFHxS	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFBA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFDoA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFHpA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFHxA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFNA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFOA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFPeA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFTeDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFTrDA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFUdA	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
PFOS	2.0	U	1	4.0	2.0	1.0	ng/L	03/26/2022 1710
Surrogate	Q %R	ec	Accep Lin	tance nit				
13C2_4:2FTS	100)	50-	150				
13C2_6:2FTS	135	5	50-	150				
13C2_8:2FTS	104		50-					
13C2_PFDoA	98		50-					
13C2_PFTeDA	97		50-					
13C3_PFBS	97			150				
13C3_PFHxS	96			150				
13C3-HFPO-DA	98			150				
13C4_PFBA	103	3	50-	150				
13C4_PFHpA	102	2	50-	150				
13C5_PFHxA	101			150				
13C5_PFPeA	102			150				
	102	-	55					

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria * = RSD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: XQ35925-001 Batch: 35925

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/24/2022 1128

Surrogate	Q % Rec	Acceptance Limit	
13C6_PFDA	96	50-150	
13C7_PFUdA	94	50-150	
13C8_PFOA	105	50-150	
13C8_PFOS	99	50-150	
13C9_PFNA	99	50-150	
d-EtFOSA	88	50-150	
d5-EtFOSAA	95	50-150	
d3-MeFOSAA	95	50-150	

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria * = RSD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: XQ35925-002 Batch: 35925

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 03/24/2022 1128

	Spike Amount	Result			%Rec	
Parameter	(ng/L)	(ng/L)	Q Dil	% Rec	Limit	Analysis Date
9CI-PF3ONS	15	15	1	99	70-150	03/26/2022 1721
11CI-PF3OUdS	15	14	1	94	70-150	03/26/2022 1721
8:2 FTS	15	16	1	102	67-138	03/26/2022 1721
6:2 FTS	15	15	1	97	64-140	03/26/2022 1721
4:2 FTS	15	16	1	105	63-143	03/26/2022 1721
GenX	32	31	1	98	70-150	03/26/2022 1721
ADONA	15	16	1	107	70-150	03/26/2022 1721
EtFOSA	16	17	1	103	70-150	03/26/2022 1721
EtFOSAA	16	16	1	97	61-135	03/26/2022 1721
MeFOSAA	16	17	1	107	65-136	03/26/2022 1721
PFBS	14	14	1	101	72-130	03/26/2022 1721
PFDS	15	15	1	96	53-142	03/26/2022 1721
PFHpS	15	16	1	107	69-134	03/26/2022 1721
PFNS	15	16	1	103	69-127	03/26/2022 1721
PFPeS	15	15	1	101	71-127	03/26/2022 1721
PFHxS	15	15	1	100	68-131	03/26/2022 1721
PFBA	16	17	1	105	73-129	03/26/2022 1721
PFDA	16	16	1	102	71-129	03/26/2022 1721
PFDoA	16	17	1	107	72-134	03/26/2022 1721
PFHpA	16	17	1	105	72-130	03/26/2022 1721
PFHxA	16	17	1	107	72-129	03/26/2022 1721
PFNA	16	17	1	103	69-130	03/26/2022 1721
PFOA	16 16	17 17	1 1	108	71-133	03/26/2022 1721
PFPeA	16	17	1	105 105	72-129 71 122	03/26/2022 1721
PFTeDA PFTrDA	16	16	1	105 98	71-132 65-144	03/26/2022 1721 03/26/2022 1721
PFUdA	16	16	1	101	69-133	03/26/2022 1721
PFOS	15	16	1	106	65-140	03/26/2022 1721
1103	13			100	03-140	03/20/2022 1/21
Surrogate	Q % Rec	Acceptanc Limit	e			
13C2_4:2FTS	88	50-150				
13C2_6:2FTS	109	50-150				
13C2_8:2FTS	93	50-150				
13C2_PFDoA	94	50-150				
13C2_PFTeDA	87	50-150				
13C3_PFBS	91	50-150				
13C3_PFHxS	90	50-150				
13C3-HFPO-DA	93	50-150				
13C4_PFBA	96	50-150				
13C4_PFHpA	95	50-150				
13C5_PFHxA	96	50-150				
13C5_PFPeA	95	50-150				
1000_1110/	/3	30-130				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - LCS

Sample ID: XQ35925-002

Batch: 35925 Analytical Method: PFAS by ID SOP QSM B-15 Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/24/2022 1128

Surrogate	Q % Rec	Acceptance Limit		
13C6_PFDA	94	50-150		
13C7_PFUdA	89	50-150		
13C8_PFOA	94	50-150		
13C8_PFOS	96	50-150		
13C9_PFNA	97	50-150		
d-EtFOSA	63	50-150		
d5-EtFOSAA	86	50-150		
d3-MeFOSAA	90	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MS

Sample ID: XC12009-001MS Batch: 35925

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/24/2022 1128

Parameter	Sample Amount (ng/L)	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	ND	13	14		1	105	70-150	03/26/2022 1743
11CI-PF3OUdS	ND	13	13		1	95	70-150	03/26/2022 1743
8:2 FTS	ND	13	14		1	106	67-138	03/26/2022 1743
6:2 FTS	ND	13	14		1	106	64-140	03/26/2022 1743
4:2 FTS	ND	13	14		1	109	63-143	03/26/2022 1743
GenX	ND	28	29		1	105	70-150	03/26/2022 1743
ADONA	ND	13	14		1	105	70-150	03/26/2022 1743
EtFOSA	ND	14	15		1	110	70-150	03/26/2022 1743
EtFOSAA	ND	14	14		1	99	61-135	03/26/2022 1743
MeFOSAA	ND	14	15		1	109	65-136	03/26/2022 1743
PFBS	2.0	12	15		1	103	72-130	03/26/2022 1743
PFDS	ND	13	13		1	94	53-142	03/26/2022 1743
PFHpS	ND	13	14		1	106	69-134	03/26/2022 1743
PFNS	ND	13	14		1	101	69-127	03/26/2022 1743
PFPeS	1.2	13	17		1	119	71-127	03/26/2022 1743
PFHxS	12	13	26		1	109	68-131	03/26/2022 1743
PFBA	6.7	14	22		1	106	73-129	03/26/2022 1743
PFDA PFDoA	ND	14	15 15		1 1	105 106	71-129	03/26/2022 1743
PFHpA	ND 2.2	14 14	16		1 1	106	72-134 72-130	03/26/2022 1743 03/26/2022 1743
PFHxA	3.7	14	18		1	101	72-130 72-129	03/26/2022 1743
PFNA	ND	14	15		1	110	69-130	03/26/2022 1743
PFOA	4.6	14	20		1	111	71-133	03/26/2022 1743
PFPeA	3.7	14	18		1	101	72-129	03/26/2022 1743
PFTeDA	ND	14	15		1	107	71-132	03/26/2022 1743
PFTrDA	ND	14	14		1	101	65-144	03/26/2022 1743
PFUdA	ND	14	16		1	112	69-133	03/26/2022 1743
PFOS	9.4	13	22		1	95	65-140	03/26/2022 1743
Surrogate	Q % Re	Ace	ceptance Limit					
13C2_4:2FTS	N 197		50-150					
13C2_6:2FTS	N 168		50-150					
13C2_8:2FTS	120		50-150					
13C2_PFDoA	90		50-150					
13C2_PFTeDA	79		50-150					
13C3_PFBS	75		50-150					
13C3_PFHxS	89		50-150					
13C3-HFPO-DA	78		50-150					
13C4_PFBA	N 40		50-150					
- 13C4_PFHpA	96		50-150					
13C5_PFHxA	89		50-150					
13C5_PFPeA	72		50-150					

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MS

Sample ID: XC12009-001MS Batch: 35925

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/24/2022 1128

Surrogate	Q % Rec	Acceptance Limit		
13C6_PFDA	95	50-150		
13C7_PFUdA	86	50-150		
13C8_PFOA	93	50-150		
13C8_PFOS	96	50-150		
13C9_PFNA	95	50-150		
d-EtFOSA	70	50-150		
d5-EtFOSAA	96	50-150		
d3-MeFOSAA	99	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

LOD = Limit of Detection

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MSD

Sample ID: XC12009-001MD Batch: 35925

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/24/2022 1128

Parameter	Sam Amo (ng/	unt Amo	ount R	esult	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
9CI-PF3ONS	ND	13		3		1	103	0.69	70-150	30	03/26/2022 1754
11CI-PF3OUdS	ND	13	1			1	100	5.5	70-150	30	03/26/2022 1754
8:2 FTS	ND	13	1			1	107	2.5	67-138	30	03/26/2022 1754
6:2 FTS	ND	13	1	4		1	104	0.88	64-140	30	03/26/2022 1754
4:2 FTS	ND	13	1	4		1	109	1.1	63-143	30	03/26/2022 1754
GenX	ND	28	3	2		1	113	8.1	70-150	30	03/26/2022 1754
ADONA	ND	13	1	4		1	109	4.1	70-150	30	03/26/2022 1754
EtFOSA	ND	14	1	5		1	106	2.9	70-150	30	03/26/2022 1754
EtFOSAA	ND	14	1	4		1	101	2.9	61-135	30	03/26/2022 1754
MeFOSAA	ND	14	1			1	110	1.8	65-136	30	03/26/2022 1754
PFBS	2.0	12	1	5		1	103	1.3	72-130	30	03/26/2022 1754
PFDS	ND	14	1	4		1	101	7.7	53-142	30	03/26/2022 1754
PFHpS	ND	13	1	4		1	102	2.9	69-134	30	03/26/2022 1754
PFNS	ND	14	1	4		1	103	3.3	69-127	30	03/26/2022 1754
PFPeS	1.2	13	1			1	120	1.9	71-127	30	03/26/2022 1754
PFHxS	12	13	2			1	117	4.3	68-131	30	03/26/2022 1754
PFBA	6.7	14		3		1	113	5.2	73-129	30	03/26/2022 1754
PFDA	ND	14	1			1	109	4.1	71-129	30	03/26/2022 1754
PFDoA	ND	14	1			1	106	0.69	72-134	30	03/26/2022 1754
PFHpA	2.2	14	1			1	101	1.0	72-130	30	03/26/2022 1754
PFHxA	3.7	14	1			1	107	1.6	72-129	30	03/26/2022 1754
PFNA	ND	14	1			1	115	5.6	69-130	30	03/26/2022 1754
PFOA	4.6	14	2			1	114	2.9	71-133	30	03/26/2022 1754
PFPeA	3.7	14	1			1	107	5.7	72-129	30	03/26/2022 1754
PFTeDA	ND	14	1			1	111	5.1	71-132	30	03/26/2022 1754
PFTrDA	ND	14	1			1	98	2.0	65-144	30	03/26/2022 1754
PFUdA	ND	14	1			1	115	3.9	69-133	30	03/26/2022 1754
PFOS	9.4	13		4		1	110	9.3	65-140	30	03/26/2022 1754
Surrogate	Q	% Rec	Acceptar Limit	ice							
13C2_4:2FTS	Ν	198	50-150)							
13C2_6:2FTS	N	169	50-150)							
13C2_8:2FTS		125	50-150)							
13C2_PFDoA		95	50-150)							
13C2_PFTeDA		80	50-150)							
13C3_PFBS		79	50-150)							
13C3_PFHxS		94	50-150)							
13C3-HFPO-DA		76	50-150)							
13C4_PFBA	N	40	50-150)							
13C4_PFHpA		102	50-150								
13C5_PFHxA		90	50-150								
13C5_PFPeA		72	50-150								
			50 100	-							

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MSD

Sample ID: XC12009-001MD Batch: 35925

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/24/2022 1128

Surrogate	Q % Rec	Acceptance Limit
13C6_PFDA	98	50-150
13C7_PFUdA	89	50-150
13C8_PFOA	91	50-150
13C8_PFOS	98	50-150
13C9_PFNA	96	50-150
d-EtFOSA	73	50-150
d5-EtFOSAA	98	50-150
d3-MeFOSAA	102	50-150

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - MB

Sample ID: XQ36434-001 Batch: 36434

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/29/2022 1803

Parameter	Resul	t Q	Dil	LOQ	LOD	DL	Units	Analysis Date
6:2 FTS	41		1	8.0	4.0	2.0	ng/L	03/31/2022 2123
PFBA	2.0	U	1	4.0	2.0	1.0	ng/L	03/31/2022 2123
Surrogate	Q	% Rec	Accept Lim	tance nit				
13C2_4:2FTS		106	50-1	150				
13C2_6:2FTS	N	225	50-1	150				
13C2_8:2FTS		93	50-1	150				
13C2_PFDoA		88	50-1	150				
13C2_PFTeDA		88	50-1	150				
13C3_PFBS		99	50-1	150				
13C3_PFHxS		96	50-1	150				
13C3-HFPO-DA		98	50-1	150				
13C4_PFBA		95	50-1	150				
13C4_PFHpA		92	50-1	150				
13C5_PFHxA		103	50-1	150				
13C5_PFPeA		99	50-1	150				
13C6_PFDA		98	50-1	150				
13C7_PFUdA		93	50-1	150				
13C8_PFOA		106	50-1	150				
13C8_PFOS		98	50-1	150				
13C9_PFNA		94	50-1	150				
d-EtFOSA		80	50-1	150				
d5-EtFOSAA		99	50-1	150				
d3-MeFOSAA		85	50-1	150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: XQ36434-002 Batch: 36434

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 03/29/2022 1803

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
6:2 FTS	15	15		1	102	64-140	03/30/2022 2142
PFBA	16	16		1	102	73-129	03/30/2022 2142
Surrogate	Q % Rec	Accepta Limit	nce				
13C2_4:2FTS	87	50-15	60				
13C2_6:2FTS	N 227	50-15	50				
13C2_8:2FTS	95	50-15	60				
13C2_PFDoA	94	50-15	50				
13C2_PFTeDA	88	50-15	0				
13C3_PFBS	97	50-15	60				
13C3_PFHxS	98	50-15	60				
13C3-HFPO-DA	93	50-15	60				
13C4_PFBA	98	50-15	60				
13C4_PFHpA	97	50-15	60				
13C5_PFHxA	89	50-15	60				
13C5_PFPeA	97	50-15	50				
13C6_PFDA	95	50-15	0				
13C7_PFUdA	94	50-15	0				
13C8_PFOA	110	50-15	60				
13C8_PFOS	90	50-15	50				
13C9_PFNA	97	50-15	50				
d-EtFOSA	75	50-15	50				
d5-EtFOSAA	90	50-15	0				
d3-MeFOSAA	109	50-15	0				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection * = RSD is out of criteria + = RPD is out of criteria

Chain of Custody and Miscellaneous Documents

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Samples Receipt Checklist (SRC) (ME0018C-15) Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020 Page 1 of 1

Sample Receipt Checklist (SRC)

Client: TETRA TECH Cooler Inspected by/date: MEH / 3/12/2022 Lot #: XC12009
Means of receipt: Pace Client UPS FedEx Other:
Yes No 1. Were custody seals present on the cooler?
Yes No NA 2. If custody seals were present, were they intact and unbroken?
pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA
Original temperature upon receipt / Derived (Corrected) temperature upon receipt
1.6 /1.6 °C NA /NA °C NA /NA °C NA /NA °C
Method: ✓ Temperature Blank Against Bottles R Gun ID: 5 IR Gun Correction Factor: 0 °C Method of coolant: ✓ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None
Yes No
I'M was Notified by: phone / email / face-to-face (circle one).
Yes No NA 4. Is the commercial courier's packing slip attached to this form?
✓ Yes No S. Were proper custody procedures (relinquished/received) followed?
Yes No 6. Were sample IDs listed on the COC?
✓ Yes No 7. Were sample IDs listed on all sample containers?
✓ Yes No 8. Was collection date & time listed on the COC?
✓ Yes No 9. Was collection date & time listed on all sample containers?
Yes No 10. Did all container label information (ID, date, time) agree with the COC?
Yes No 11. Were tests to be performed listed on the COC?
Yes No 12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
✓ Yes No 13. Was adequate sample volume available?
Yes No 14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ✓ No 15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
Yes No No NA 16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (4"or 6mm in diameter)
in any of the VOA vials?
Yes No No NA 17. Were all DRO/metals/nutrient samples received at a pH of ≤ 2?
Yes No No NA 18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
Yes No No NA 19. Were all applicable NR ₃ /TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
Yes No NA 20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc)
correctly transcribed from the COC into the comment section in LIMS?
Yes ✓ No 21. Was the quote number listed on the container label? If yes, Quote #
Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)
Sample(s) MA were received incorrectly preserved and were adjusted accordingly
in sample receiving with NAmL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA
Time of preservation NA . If more than one preservative is needed, please note in the comments below.
Sample(s) NAwere received with bubbles >6 mm in diameter.
Samples(s) $\frac{NA}{}$ were received with TRC > 0.5 mg/L (If #19 is no) and were
adjusted accordingly in sample receiving with sodium thiosulfate (Na ₂ S ₂ O ₃) with Shealy ID: NA
SR barcode labels applied by: MEH Date: 3/12/2022
Comments:



Report of Analysis

Tetra Tech

Foster Plaza 7 661 Anderson Drive Pittsburgh, PA 15220 Attention: Alex Murphy

Project Name: CHP

Project Number: 112G09581

Lot Number: WJ30024

Date Completed: 11/18/2021

Kathy Smith

11/18/2021 9:39 AM
Approved and released by:
Project Manager II: **Kathy E. Smith**





The electronic signature above is the equivalent of a handwritten signature.

This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

Case Narrative Tetra Tech Lot Number: WJ30024

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the Pace Quality Assurance Management Plan (QAMP), applicable Shealy standard operating procedures (SOPs), the 2003 NELAC standard, and Shealy policies. Additionally, the DoD QSM version 5.3 has been followed for these samples, and specifically Table B-15 was followed for all PFAS samples. Any exceptions to the QAMP, SOPs, NELAC standards, the DoD QSM, or policies are qualified on the results page or discussed below.

All QC associated with these samples was in compliance with DOD QSM 5.3 table B-15 and our PFAS SOP.

Correction factors (CF) are used to calculate the original sample concentration. The CF is the inverse of the concentration factor (sample volume / extract final volume) times the dilution factor (DF). For undiluted analysis. For undiluted analysis, the extract is prepared for injection by adding 182 uL of sample extract + 8 uL of reagent water + 10 uL of internal standard solution to a polypropylene autosampler vial. An extra correction factor of 0.91 (182 uL / 200 uL = 0.91) applies. The CF is calculated as follows:

CF = DF * FV / Vo

FV is volume of extract (mL)
Vo is initial sample volume (mL)
DF is dilution factor. For undiluted analysis, DF = 1/0.91.

Sample concentration for aqueous samples:

Concentration (ng/L) = Cs*CF,

$$C_{s} = \frac{\left(\frac{(A_{s} \times C_{is})}{A_{is}}\right) - B}{M1}$$

Where

C_s is on column concentration of target analyte in the sample (ng/L)
C_{is} is concentration of internal standard in the sample (ng/L)
A_s is peak response of target analyte in the sample
A_{is} is peak response of internal standard in the sample
M1 is the average RF from ICAL or the slope from linear regression ICAL
B is the y-intercept from the ICAL

SC DHEC No: 32010001 NELAC No: E87653 NC DENR No: 329 NC Field Parameters No: 5639

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation:

Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, Fecal Coliform SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, Solid Chemical Material: TOC Walkley-Black.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Surrogate recovery for the following sample was outside control limits: WJ30024-002. Sample was prepped as the batch MS with concurring results. The data has been reported.

Surrogate recovery for the following samples was outside the upper control limit: WJ30024-001, WJ30024-003, WJ30024-004. This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Sample Summary

Tetra Tech

Lot Number: WJ30024 Project Name: CHP

Project Number: 112G09581

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	CHPMW0035-008.5-10282021	Aqueous	10/28/2021 0945	10/29/2021
002	CHPMW0033-035.5-10282021	Aqueous	10/28/2021 1030	10/29/2021
003	CHPMW0034-024.4-10282021	Aqueous	10/28/2021 1115	10/29/2021
004	CHDMW0033-044.5-10282021	Aqueous	10/28/2021 1350	10/29/2021

(4 samples)

Detection Summary Tetra Tech

Lot Number: WJ30024 Project Name: CHP

Project Number: 112G09581

Sampl	e Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	CHPMW0035-008.5-10282021	Aqueous	6:2 FTS	PFAS by ID	7.7		ng/L	5
001	CHPMW0035-008.5-10282021	Aqueous	PFBS	PFAS by ID	4.1		ng/L	5
001	CHPMW0035-008.5-10282021	Aqueous	PFPeS	PFAS by ID	2.8	I	ng/L	5
001	CHPMW0035-008.5-10282021	Aqueous	PFHxS	PFAS by ID	22		ng/L	5
001	CHPMW0035-008.5-10282021	Aqueous	PFBA	PFAS by ID	6.9		ng/L	5
001	CHPMW0035-008.5-10282021	Aqueous	PFHpA	PFAS by ID	1.8	1	ng/L	5
001	CHPMW0035-008.5-10282021	Aqueous	PFHxA	PFAS by ID	46		ng/L	5
001	CHPMW0035-008.5-10282021	Aqueous	PFOA	PFAS by ID	2.3	I	ng/L	5
001	CHPMW0035-008.5-10282021	Aqueous	PFPeA	PFAS by ID	4.3		ng/L	5
001	CHPMW0035-008.5-10282021	Aqueous	PFOS	PFAS by ID	6.5		ng/L	5
002	CHPMW0033-035.5-10282021	Aqueous	PFBS	PFAS by ID	2.7	I	ng/L	7
002	CHPMW0033-035.5-10282021	Aqueous	PFPeS	PFAS by ID	2.6	I	ng/L	7
002	CHPMW0033-035.5-10282021	Aqueous	PFHxS	PFAS by ID	20		ng/L	7
002	CHPMW0033-035.5-10282021	Aqueous	PFBA	PFAS by ID	4.4	Q	ng/L	7
002	CHPMW0033-035.5-10282021	Aqueous	PFHpA	PFAS by ID	1.8	1	ng/L	7
002	CHPMW0033-035.5-10282021	Aqueous	PFOA	PFAS by ID	5.0		ng/L	7
002	CHPMW0033-035.5-10282021	Aqueous	PFPeA	PFAS by ID	4.2		ng/L	7
002	CHPMW0033-035.5-10282021	Aqueous	PFOS	PFAS by ID	4.7		ng/L	7
003	CHPMW0034-024.4-10282021	Aqueous	PFBS	PFAS by ID	2.7	I	ng/L	9
003	CHPMW0034-024.4-10282021	Aqueous	PFPeS	PFAS by ID	1.9	1	ng/L	9
003	CHPMW0034-024.4-10282021	Aqueous	PFHxS	PFAS by ID	16		ng/L	9
003	CHPMW0034-024.4-10282021	Aqueous	PFBA	PFAS by ID	3.7		ng/L	9
003	CHPMW0034-024.4-10282021	Aqueous	PFHpA	PFAS by ID	1.5	1	ng/L	9
003	CHPMW0034-024.4-10282021	Aqueous	PFHxA	PFAS by ID	2.9	I	ng/L	9
003	CHPMW0034-024.4-10282021	Aqueous	PFOA	PFAS by ID	3.9		ng/L	9
003	CHPMW0034-024.4-10282021	Aqueous	PFPeA	PFAS by ID	3.8		ng/L	9
003	CHPMW0034-024.4-10282021	Aqueous	PFOS	PFAS by ID	3.6		ng/L	9
004	CHDMW0033-044.5-10282021	Aqueous	PFBS	PFAS by ID	3.5		ng/L	11
004	CHDMW0033-044.5-10282021	Aqueous	PFPeS	PFAS by ID	2.3	1	ng/L	11
004	CHDMW0033-044.5-10282021	Aqueous	PFHxS	PFAS by ID	22		ng/L	11
004	CHDMW0033-044.5-10282021	Aqueous	PFBA	PFAS by ID	4.8		ng/L	11
004	CHDMW0033-044.5-10282021	Aqueous	PFHpA	PFAS by ID	2.2	I	ng/L	11
004	CHDMW0033-044.5-10282021	Aqueous	PFHxA	PFAS by ID	3.2	I	ng/L	11
004	CHDMW0033-044.5-10282021	Aqueous	PFOA	PFAS by ID	4.6		ng/L	11
004	CHDMW0033-044.5-10282021	Aqueous	PFPeA	PFAS by ID	4.0		ng/L	11
004	CHDMW0033-044.5-10282021	Aqueous	PFOS	PFAS by ID	4.8		ng/L	11

(36 detections)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: WJ30024-001

Description: CHPMW0035-008.5-10282021

Date Sampled:10/28/2021 0945 Project Name: CHP

Date Received: 10/29/2021 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 11/08/2021 1749 JJG 11/03/2021 1145 21098

Parameter	CAS Number	Analytical Method	Result		LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
$\hbox{11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)}\\$	763051-92-9	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.5	UQ	6.9	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	7.7		6.9	3.5	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.5	UQ	6.9	3.5	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	4.1		3.4	1.7	0.86	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.8	1	3.4	1.7	0.86	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	22		3.4	1.7	0.86	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	6.9		3.4	1.7	0.86	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	1	3.4	1.7	0.86	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	46		3.4	1.7	0.86	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	2.3	1	3.4	1.7	0.86	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	4.3		3.4	1.7	0.86	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.7	U	3.4	1.7	0.86	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	6.5		3.4	1.7	0.86	ng/L	1
		otance mits							
13C2_4:2FTS N	175 50	-150							
13C2_6:2FTS	131 50	-150							
13C2_8:2FTS N	403 50	-150							
13C2_PFDoA	96 50	-150							
13C2_PFTeDA	92 50	-150							
13C3_PFBS	97 50	-150							
13C3_PFHxS	110 50	-150							
13C3-HFPO-DA	108 50	-150							
13C4_PFBA	73 50	-150							
13C4_PFHpA	106 50	-150							
13C5_PFHxA	102 50	-150							

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13C5_PFPeA

13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

98

128

110

50-150

50-150

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: CHPMW0035-008.5-10282021

Laboratory ID: WJ30024-001

Matrix: Aqueous

Date Sampled:10/28/2021 0945 Date Received: 10/29/2021

Project Name: CHP Project Number: 112G09581

13C8_PFOA 107 50-150 13C8_PFOS 102 50-150 13C9_PFNA 113 50-150 d-EtFOSA 79 50-150 d5-EtFOSAA 102 50-150 d3-MeFOSAA 106 50-150	Surrogate	Run 1 A Q % Recovery	cceptance Limits	
13C9_PFNA 113 50-150 d-EtFOSA 79 50-150 d5-EtFOSAA 102 50-150	13C8_PFOA	107	50-150	
d-EtFOSAA 79 50-150 d5-EtFOSAA 102 50-150	13C8_PFOS	102	50-150	
d5-EtFOSAA 102 50-150	13C9_PFNA	113	50-150	
	d-EtFOSA	79	50-150	
d3-MeFOSAA 106 50-150	d5-EtFOSAA	102	50-150	
	d3-MeFOSAA	106	50-150	

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: WJ30024-002

Description: CHPMW0033-035.5-10282021

Date Sampled:10/28/2021 1030 Project Name: CHP

Date Received: 10/29/2021 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 11/04/2021 2107 JJG 11/03/2021 1145 21098

Parameter	CAS Number	Analytical Method	Result Q	LOQ	LOD	DL	Units Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.5 U	7.0	3.5	1.8	ng/L 1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.5 U	7.0	3.5	1.8	ng/L 1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.5 U	7.0	3.5	1.8	ng/L 1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.5 U	7.0	3.5	1.8	ng/L 1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.5 UC	7.0	3.5	1.8	ng/L 1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.5 U	7.0	3.5	1.8	ng/L 1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.5 U	7.0	3.5	1.8	ng/L 1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.5 U	7.0	3.5	1.8	ng/L 1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.5 U	7.0	3.5	1.8	ng/L 1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.5 U	7.0	3.5	1.8	ng/L 1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.7 I	3.5	1.8	0.88	ng/L 1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8 U	3.5	1.8	0.88	ng/L 1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8 U	3.5	1.8	0.88	ng/L 1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8 U	3.5	1.8	0.88	ng/L 1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.6 I	3.5	1.8	0.88	ng/L 1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	20	3.5	1.8	0.88	ng/L 1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	4.4 Q	3.5	1.8	0.88	ng/L 1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8 U	3.5	1.8	0.88	ng/L 1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8 U	3.5	1.8	0.88	ng/L 1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8 I	3.5	1.8	0.88	ng/L 1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8 U	3.5	1.8	0.88	ng/L 1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8 U	3.5	1.8	0.88	ng/L 1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	5.0	3.5	1.8	0.88	ng/L 1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	4.2	3.5	1.8	0.88	ng/L 1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8 U	3.5	1.8	0.88	ng/L 1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8 U	3.5	1.8	0.88	ng/L 1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8 U	3.5	1.8	0.88	ng/L 1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	4.7	3.5	1.8	0.88	ng/L 1
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	<u> </u>	nits -150					
		-150 -150					
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		-150					
		-150					
13C6_PFDA	96 50	-150					

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13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

95

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: CHPMW0033-035.5-10282021

Project Name: CHP

Project Number: 112G09581

Laboratory ID: WJ30024-002 Matrix: Aqueous

Date Sampled:10/28/2021 1030

Date Received: 10/29/2021

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		93	50-150
13C8_PFOS		93	50-150
13C9_PFNA		99	50-150
d-EtFOSA		74	50-150
d5-EtFOSAA		116	50-150
d3-MeFOSAA		110	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: WJ30024-003

Description: CHPMW0034-024.4-10282021

Date Sampled:10/28/2021 1115 Project Name: CHP

Date Received: 10/29/2021 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 11/04/2021 2128 JJG 11/03/2021 1145 21098

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	2.7	I	3.6	1.8	0.90	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	I	3.6	1.8	0.90	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	16		3.6	1.8	0.90	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	3.7		3.6	1.8	0.90	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.5	1	3.6	1.8	0.90	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	2.9	1	3.6	1.8	0.90	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	3.9		3.6	1.8	0.90	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	3.8		3.6	1.8	0.90	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	3.6		3.6	1.8	0.90	ng/L	1
		otance nits							
_		-150							
13C2_6:2FTS	112 50	-150							
13C2_8:2FTS	107 50	-150							
13C2_PFDoA	84 50	-150							
13C2_PFTeDA	85 50	-150							
13C3_PFBS	87 50	-150							
13C3_PFHxS	92 50	-150							
13C3-HFPO-DA	100 50	-150							
13C4_PFBA	54 50	-150							
13C4_PFHpA	94 50	-150							
13C5_PFHxA	95 50	-150							
13C5_PFPeA	79 50	-150							
13C6_PFDA	89 50	-150							
13C7_PFUdA	92 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: CHPMW0034-024.4-10282021

Laboratory ID: WJ30024-003

Date Sampled:10/28/2021 1115

Matrix: Aqueous

Project Name: CHP

Date Received: 10/29/2021 Project Number: 112G09581

Surrogate	Run 1 Ac Q % Recovery	Acceptance Limits
13C8_PFOA	89	50-150
13C8_PFOS	88	50-150
13C9_PFNA	95	50-150
d-EtFOSA	81	50-150
d5-EtFOSAA	102	50-150
d3-MeFOSAA	100	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: WJ30024-004

Description: CHDMW0033-044.5-10282021

Date Sampled:10/28/2021 1350 Project Name: CHP

Date Received: 10/29/2021 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 11/11/2021 1610 JJG 11/03/2021 1145 21098

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.5	UQ	6.9	3.5	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	3.5		3.5	1.8	0.87	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.3	ı	3.5	1.8	0.87	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	22		3.5	1.8	0.87	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	4.8		3.5	1.8	0.87	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.2	I	3.5	1.8	0.87	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	3.2	i	3.5	1.8	0.87	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	4.6	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	4.0		3.5	1.8	0.87	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.5	1.8		ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	4.8	O	3.5		0.87	ng/L	1
, ,		· ·	4.0		3.5	1.8	0.87	rig/L	'
Surrogate Ru Q % Rec	overy Lir	otance mits							
13C2_4:2FTS N 2	03 50	-150							
13C2_6:2FTS 1	15 50	-150							
13C2_8:2FTS	91 50	-150							
13C2_PFDoA	34 50	-150							
13C2_PFTeDA	38 50	-150							
13C3_PFBS	95 50	-150							
13C3_PFHxS 1	17 50	-150							
13C3-HFPO-DA 1	04 50	-150							
13C4_PFBA	56 50	-150							
13C4_PFHpA 1	09 50	-150							
13C5_PFHxA 1	18 50	-150							
13C5_PFPeA 8	38 50	-150							
13C6_PFDA	94 50	-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: CHDMW0033-044.5-10282021

Laboratory ID: WJ30024-004

Date Sampled:10/28/2021 1350 Project Name: CHP Matrix: Aqueous

Date Received: 10/29/2021

Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	cceptance Limits	
13C8_PFOA	105	50-150	
13C8_PFOS	109	50-150	
13C9_PFNA	107	50-150	
d-EtFOSA	94	50-150	
d5-EtFOSAA	93	50-150	
d3-MeFOSAA	101	50-150	

LOQ = Limit of Quantitation U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

	C	2C Summa	ary	
Analytical Services, LLC (formerly Shealy Enantage Point Drive West Columbia, SC 291				_

PFAS by LC/MS/MS - MB

Sample ID: WQ21098-001 Batch: 21098

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 11/03/2021 1145

9CL PRONIS	Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
82 PTS	9CI-PF3ONS	4.0	U	1	8.0	4.0	2.0	ng/L	11/04/2021 1922
6-2 FTS	11CI-PF3OUdS	4.0	U	1	8.0	4.0	2.0	ng/L	11/04/2021 1922
4-2 FTS 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 GenX 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 EIFOSA 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 EIFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 MeFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 PFBS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U	8:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	11/04/2021 1922
CenX 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 ADONA 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 EIFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 PEBS 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 PEBS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PEBS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFBS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U	6:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	11/04/2021 1922
ADONA	4:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	11/04/2021 1922
EIFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 EIFOSAAA 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 PFBS 2.0 U 1 8.0 2.0 1.0 ng/L 11/04/2021 1922 PFBS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFBS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U	GenX	4.0	U	1	8.0	4.0	2.0	ng/L	11/04/2021 1922
EIFOSAA 4.0 U 1 8.0 4.0 2.0 ng/L 11/04/2021 1922 PEBS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFBA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U		4.0	U	1				ng/L	
MEFOSAA		4.0	U	1				ng/L	11/04/2021 1922
PFBS	EtFOSAA		U	1				ng/L	11/04/2021 1922
PFDS	MeFOSAA		U	1				ng/L	11/04/2021 1922
PFHpS	PFBS	2.0	U	1	4.0	2.0	1.0	ng/L	11/04/2021 1922
PFNS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFPBS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFBA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFHpA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTDA 2.0 U	PFDS	2.0	U	1	4.0	2.0	1.0	ng/L	11/04/2021 1922
PFPES 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFHXS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFBA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDAA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFHAA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFHAA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTeDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTeDA	PFHpS	2.0	U	1	4.0	2.0	1.0	ng/L	11/04/2021 1922
PFHXS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFBA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDAA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDAA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFHXA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTDA 2.0 1	PFNS	2.0	U	1	4.0	2.0	1.0	ng/L	11/04/2021 1922
PFBA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDAA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFHAA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDA 2.0 U				1				ng/L	11/04/2021 1922
PFDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFDAA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFHAA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTEDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTEDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTIDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUBA 2.0 V	PFHxS	2.0	U	1	4.0			ng/L	11/04/2021 1922
PFDOA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFHDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFHXA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFPA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTEDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUDA 3 50-150				1					
PFHPA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFHXA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFPeA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTeDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUDA 3.0 Nec	PFDA	2.0	U	1	4.0		1.0	ng/L	11/04/2021 1922
PFHXA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTeDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 SUTYON 1.0 1.0 <td></td> <td>2.0</td> <td>U</td> <td>1</td> <td>4.0</td> <td>2.0</td> <td>1.0</td> <td>ng/L</td> <td>11/04/2021 1922</td>		2.0	U	1	4.0	2.0	1.0	ng/L	11/04/2021 1922
PFNA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFPAA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 Surrogate 0 Rec CLimit 50 150 50 50 50 50 50 50 50 50	PFHpA		U	1	4.0	2.0	1.0	ng/L	11/04/2021 1922
PFOA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFPeA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTeBA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUGA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUGA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUGA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 Surrogate 3 Rec 150 1.0 ng/L 11/04/2021 1922 1.0 1.0 1.0 1.0 1.0 1			U	1	4.0	2.0	1.0	ng/L	11/04/2021 1922
PFPEA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTeDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUGA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 Surrogate 2.0 N Rec 10.5 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0			U	1	4.0	2.0	1.0	ng/L	11/04/2021 1922
PFTEDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 Surrogate 0 % Rec Limit									
PFTrDA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFUdA 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 Surrogate Q Rec Acceptance Limit 1.0 ng/L 11/04/2021 1922 33C2_4:2FTS 102 50-150 50-150 50-150 50-150 50-150 13C2_PFDoA 84 50-150 50-150 50-150 50-150 50-150 13C3_PFBS 86 50-150 50-150 50-150 50-150 50-150 13C3_PFBA 89 50-150 50-150 50-150 50-150 50-150 50-150 13C4_PFBA 89 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150 50-150									
PFUdA PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 Surrogate Q % Rec Acceptance Limit Company Acceptance Accepta									
PFOS 2.0 U 1 4.0 2.0 1.0 ng/L 11/04/2021 1922 Surrogate Q % Rec ***Ceeptance Limit ***Ceeptance Limit									
Surrogate Q Acceptance Limit 13C2_4:2FTS 114 50-150 13C2_6:2FTS 102 50-150 13C2_B:2FTS 90 50-150 13C2_PFDOA 84 50-150 13C2_PFTEDA 80 50-150 13C3_PFBS 86 50-150 13C3_PFHxS 89 50-150 13C3-HFPO-DA 94 50-150 13C4_PFBA 89 50-150 13C4_PFHpA 88 50-150 13C5_PFHxA 81 50-150								ng/L	
Surrogate Q % Rec Limit 13C2_4:2FTS 114 50-150 13C2_6:2FTS 102 50-150 13C2_PFTOA 84 50-150 13C2_PFTeDA 80 50-150 13C3_PFBS 86 50-150 13C3_PFHxS 89 50-150 13C3-HFPO-DA 94 50-150 13C4_PFBA 89 50-150 13C4_PFHpA 88 50-150 13C5_PFHxA 81 50-150	PFOS	2.0	U	1	4.0	2.0	1.0	ng/L	11/04/2021 1922
13C2_6:2FTS 102 50-150 13C2_8:2FTS 90 50-150 13C2_PFDoA 84 50-150 13C2_PFTeDA 80 50-150 13C3_PFBS 86 50-150 13C3_PFHxS 89 50-150 13C3_HFPO-DA 94 50-150 13C4_PFBA 89 50-150 13C4_PFHpA 88 50-150 13C5_PFHxA 81 50-150	Surrogate	Q %R	ec	Accep Lin	tance nit				
13C2_8:2FTS9050-15013C2_PFDoA8450-15013C2_PFTeDA8050-15013C3_PFBS8650-15013C3_PFHxS8950-15013C3-HFPO-DA9450-15013C4_PFBA8950-15013C4_PFHpA8850-15013C5_PFHxA8150-150	13C2_4:2FTS	114		50-	150				
13C2_8:2FTS9050-15013C2_PFDoA8450-15013C2_PFTeDA8050-15013C3_PFBS8650-15013C3_PFHxS8950-15013C3-HFPO-DA9450-15013C4_PFBA8950-15013C4_PFHpA8850-15013C5_PFHxA8150-150	13C2_6:2FTS	102)	50-	150				
13C2_PFDoA8450-15013C2_PFTeDA8050-15013C3_PFBS8650-15013C3_PFHxS8950-15013C3-HFPO-DA9450-15013C4_PFBA8950-15013C4_PFHpA8850-15013C5_PFHxA8150-150									
13C2_PFTeDA8050-15013C3_PFBS8650-15013C3_PFHxS8950-15013C3-HFPO-DA9450-15013C4_PFBA8950-15013C4_PFHpA8850-15013C5_PFHxA8150-150									
13C3_PFBS8650-15013C3_PFHxS8950-15013C3-HFPO-DA9450-15013C4_PFBA8950-15013C4_PFHpA8850-15013C5_PFHxA8150-150									
13C3_PFHxS 89 50-150 13C3-HFPO-DA 94 50-150 13C4_PFBA 89 50-150 13C4_PFHpA 88 50-150 13C5_PFHxA 81 50-150									
13C3-HFPO-DA 94 50-150 13C4_PFBA 89 50-150 13C4_PFHpA 88 50-150 13C5_PFHxA 81 50-150									
13C4_PFBA 89 50-150 13C4_PFHpA 88 50-150 13C5_PFHxA 81 50-150									
13C4_PFHpA 88 50-150 13C5_PFHxA 81 50-150									
13C5_PFHxA 81 50-150									
	·								
19C9_L11 CV 00 90-100									
	13C3_PFPEA	85		50-	130				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MB

Sample ID: WQ21098-001 Batch: 21098

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 11/03/2021 1145

Surrogate Q	% Rec	Acceptance Limit	
13C6_PFDA	85	50-150	
13C7_PFUdA	92	50-150	
13C8_PFOA	81	50-150	
13C8_PFOS	85	50-150	
13C9_PFNA	87	50-150	
d-EtFOSA	74	50-150	
d5-EtFOSAA	99	50-150	
d3-MeFOSAA	97	50-150	

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: WQ21098-002 Batch: 21098

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 11/03/2021 1145

	Spike Amount	Result				%Rec	
Parameter	(ng/L)	(ng/L)	Q	Dil	% Rec	Limit	Analysis Date
9CI-PF3ONS	15	14		1	93	70-150	11/04/2021 1933
11CI-PF3OUdS	15	13		1	87	70-150	11/04/2021 1933
8:2 FTS	15	14		1	90	67-138	11/04/2021 1933
6:2 FTS	15	16		1	104	64-140	11/04/2021 1933
4:2 FTS	15	13		1	86	63-143	11/04/2021 1933
GenX	32	31		1	97	70-150	11/04/2021 1933
ADONA	15	16		1	106	70-150	11/04/2021 1933
EtFOSA	16	16		1	103	70-150	11/04/2021 1933
EtFOSAA	16	14		1	87	61-135	11/04/2021 1933
MeFOSAA	16	17		1	106	65-136	11/04/2021 1933
PFBS	14	14		1	100	72-130	11/04/2021 1933
PFDS	15	14		1	91	53-142	11/04/2021 1933
PFHpS	15	16		1	106	69-134	11/04/2021 1933
PFNS	15	15		1	100	69-127	11/04/2021 1933
PFPeS	15 15	15		1	98	71-127	11/04/2021 1933
PFHxS	15	16 17		1	111	68-131	11/04/2021 1933
PFBA PFDA	16	17 16		1 1	104	73-129	11/04/2021 1933
PFDoA	16 16	16		1	102 100	71-129 72-134	11/04/2021 1933 11/04/2021 1933
PFHpA	16	17		1	106	72-134 72-130	11/04/2021 1933
PFHxA	16	17		1	100	72-130	11/04/2021 1933
PFNA	16	18		1	110	69-130	11/04/2021 1933
PFOA	16	16		1	97	71-133	11/04/2021 1933
PFPeA	16	16		1	101	72-129	11/04/2021 1933
PFTeDA	16	16		1	101	71-132	11/04/2021 1933
PFTrDA	16	17		1	108	65-144	11/04/2021 1933
PFUdA	16	15		1	95	69-133	11/04/2021 1933
PFOS	15	15		1	104	65-140	11/04/2021 1933
Surrogate	Q % Rec	Acceptan Limit	ce				
13C2_4:2FTS	112	50-150					
13C2_6:2FTS	93	50-150					
13C2_8:2FTS	95	50-150					
13C2_PFDoA	83	50-150					
13C2_PFTeDA	86	50-150					
13C3_PFBS	88	50-150					
13C3_PFHxS	84	50-150					
13C3-HFPO-DA	97						
		50-150					
13C4_PFBA	90	50-150					
13C4_PFHpA	82	50-150					
13C5_PFHxA	84	50-150					
13C5_PFPeA	86	50-150					

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - LCS

Sample ID: WQ21098-002 Batch: 21098

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 11/03/2021 1145

Surrogate Q	% Rec	Acceptance Limit		
13C6_PFDA	84	50-150		
13C7_PFUdA	91	50-150		
13C8_PFOA	88	50-150		
13C8_PFOS	89	50-150		
13C9_PFNA	83	50-150		
d-EtFOSA	76	50-150		
d5-EtFOSAA	101	50-150		
d3-MeFOSAA	100	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - MS

Sample ID: WJ30024-002MS Batch: 21098

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 11/03/2021 1145

Parameter	Sample Amount (ng/L)	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	ND	13	11		1	88	70-150	11/04/2021 2118
11CI-PF3OUdS	ND	13	11		1	81	70-150	11/04/2021 2118
8:2 FTS	ND	13	14		1	102	67-138	11/04/2021 2118
6:2 FTS	ND	13	14		1	106	64-140	11/04/2021 2118
4:2 FTS	ND	13	12		1	89	63-143	11/04/2021 2118
GenX	ND	28	29		1	103	70-150	11/04/2021 2118
ADONA	ND	13	14		1	104	70-150	11/04/2021 2118
EtFOSA	ND	14	13		1	97	70-150	11/04/2021 2118
EtFOSAA	ND	14	13		1	97	61-135	11/04/2021 2118
MeFOSAA	ND	14	13		1	96	65-136	11/04/2021 2118
PFBS	2.7	12	15		1	100	72-130	11/04/2021 2118
PFDS	ND	13	9.8		1	74	53-142	11/04/2021 2118
PFHpS	ND	13	13		1	100	69-134	11/04/2021 2118
PFNS	ND	13	12		1	86	69-127	11/04/2021 2118
PFPeS PFHxS	2.6 20	13 13	17 36		1 1	109 122	71-127 68-131	11/04/2021 2118 11/04/2021 2118
PFBA	4.4	13 14	36 18		1	100	73-129	11/04/2021 2118
PFDA	ND	14	14		1	100	73-129 71-129	11/04/2021 2118
PFDoA	ND	14	15		1	102	71-129	11/04/2021 2118
PFHpA	1.8	14	16		1	103	72-134	11/04/2021 2118
PFHxA	ND	14	17		1	122	72-130 72-129	11/04/2021 2118
PFNA	ND	14	15		1	108	69-130	11/04/2021 2118
PFOA	5.0	14	19		1	99	71-133	11/04/2021 2118
PFPeA	4.2	14	19		1	107	72-129	11/04/2021 2118
PFTeDA	ND	14	14		1	104	71-132	11/04/2021 2118
PFTrDA	ND	14	15		1	105	65-144	11/04/2021 2118
PFUdA	ND	14	14		1	101	69-133	11/04/2021 2118
PFOS	4.7	13	15		1	80	65-140	11/04/2021 2118
Surrogate	Q % Re	Acce c L	eptance imit					
13C2_4:2FTS	N 202	50	0-150					
13C2_6:2FTS	127	50	0-150					
13C2_8:2FTS	96	50	0-150					
13C2_PFDoA	78	50	0-150					
13C2_PFTeDA	79	50	0-150					
13C3_PFBS	85	50	0-150					
13C3_PFHxS	90		0-150					
13C3-HFPO-DA	92		0-150					
13C4_PFBA	N 47		0-150					
13C4_PFHpA	90		0-150					
13C5_PFHxA	84		0-150					
13C5_PFPeA	77		0-150					
1000_1116A	77	31	u- I JU					

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MS

Sample ID: WJ30024-002MS Batch: 21098

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 11/03/2021 1145

Surrogate	% Rec	Acceptance Limit		
13C6_PFDA	86	50-150		
13C7_PFUdA	87	50-150		
13C8_PFOA	88	50-150		
13C8_PFOS	90	50-150		
13C9_PFNA	86	50-150		
d-EtFOSA	79	50-150		
d5-EtFOSAA	99	50-150		
d3-MeFOSAA	101	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

+ = RPD is out of criteria

PFAS by LC/MS/MS - Duplicate

Sample ID: WJ30024-003DU Batch: 21098

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 11/03/2021 1145

ND ND ND ND ND ND			U U U	1 1 1	0.00 0.00	20 20	11/04/2021 2139 11/04/2021 2139
ND ND ND ND ND			U U		0.00		
ND ND ND ND				1			11/04/2021 2139
ND ND ND			U	•	0.00	20	11/04/2021 2139
ND ND			_	1	0.00	20	11/04/2021 2139
ND			U	1	0.00	20	11/04/2021 2139
			U	1	0.00	20	11/04/2021 2139
			U	1	0.00	20	11/04/2021 2139
ND			U	1	0.00	20	11/04/2021 2139
ND			U	1	0.00	20	11/04/2021 2139
ND			U	1	0.00	20	11/04/2021 2139
2.7		2.1	+	1	26	20	11/04/2021 2139
ND			U	1	0.00	20	11/04/2021 2139
ND			U	1	0.00	20	11/04/2021 2139
							11/04/2021 2139
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			U				11/04/2021 2139
							11/04/2021 2139
			U	1			11/04/2021 2139
3.6		3.0	1	1	15	20	11/04/2021 2139
Q	% Rec	Acce _l Li	otance mit				
N	176	50	-150				
	111	50	-150				
	97	50	-150				
	86	50	-150				
	87	50	-150				
	98						
	ND 1.9 16 3.7 ND ND 1.5 2.9 ND 3.9 3.8 ND ND ND 3.6	ND 1.9 16 3.7 ND ND 1.5 2.9 ND 3.9 3.8 ND ND ND 3.6 Q % Rec N 176 111 97 86 87 88 91	ND 1.9 2.0 16 1.5 3.7 3.4 ND ND 1.5 2.9 3.0 ND 3.9 3.0 ND S 3.6 3.0 Accept Liir N 176 50- 86 50- 87 50- 88 50- 91 98 50- 98 50- 99 50- 99 50-	ND U 1.9 2.0 I 16 15 3.7 3.4 I ND U ND U 1.5 1.5 I 2.9 3.0 I ND U 3.9 4.1 3.8 4.2 ND U ND U 3.9 4.1 3.8 4.2 ND U ND U 3.6 3.0 I ND U 3.6 3.0 I Acceptance Limit N 176 50-150 97 50-150 97 50-150 88 50-150 98 50-150 98 50-150 99 50-150 99 50-150	ND U 1 1.9 2.0 I 1 16 15 1 3.7 3.4 I 1 ND U 1 ND U 1 1.5 1.5 I 1 2.9 3.0 I 1 ND U 1 3.9 4.1 1 3.8 4.2 1 ND U 1 So-150 97 50-150 86 50-150 97 50-150 98 50-150 98 50-150 99 50-150 99 50-150 99 50-150	ND	ND

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - Duplicate

Sample ID: WJ30024-003DU Batch: 21098

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 11/03/2021 1145

Surrogate	Q % Rec	Acceptance Limit		
13C6_PFDA	87	50-150		
13C7_PFUdA	90	50-150		
13C8_PFOA	88	50-150		
13C8_PFOS	91	50-150		
13C9_PFNA	91	50-150		
d-EtFOSA	72	50-150		
d5-EtFOSAA	101	50-150		
d3-MeFOSAA	106	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

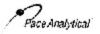
 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Chain of Custody and Miscellaneous Documents

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Tetra Tech, Inc.				8 6/6/7 12 hr.		SAMBI E	EDOMINE	7 W 002	MINCONS	MUDOSS											E	WHITE (A
ra Te	PROJECT NO: 11.2 g C/9020 SAMPLERS ISIGNATURE 10.5 ect Shofel	ħ.	1	T 🗆 ()			V	_	-	CHO									ED BY	E0 84	ED BY	
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Samples Receipt Checklist (SRC) (ME0018C-15) Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020 Page 1 of 1

Sample Receipt Checklist (SRC)

Client; Tetra Tech	Cooler Inspected by/date: KSC / 10/39/2021 Lot #; WJ30024							
Means of receipt: 2	ace Client UPS ✓ FedEx Other:							
✓ Yes No	✓ Yes No 1. Were custody seals present on the cooler?							
√ Yes No NA	2. If custody seals were present, were they intact and unbroken?							
pH Strip ID: NA	Chlorine Strip ID: NA Tested by: JRG2							
Original temperature upor	n receipt / Derived (Corrected) temperature upon receipt							
Method of coolant:	Blank Against Bottles R Gun ID: 5 IR Gun Correction Factor: 0 °C Wet Ice Ice Packs Dry Ice None							
□Yes □No ☑NA	12 184							
	PM was Notified by: phone / email / face-to-face (circle one).							
Yes No NA	4. Is the commercial courier's packing slip attached to this form?							
Yes No	5. Were proper custody procedures (relinquished/received) followed?							
✓ Yes No	6. Were sample IDs listed on the COC?							
✓ Yes No	7. Were sample IDs listed on all sample containers?							
	8. Was collection date & time fisted on the COC?							
✓ Yes No	9. Was collection date & time listed on all sample containers? 10. Did all professional had information (ID). 11. Did all professional had information (ID). 12. Did all professional had information (ID). 13. Did all professional had information (ID). 14. Did all professional had information (ID). 15. Did all professional had information (ID). 16. Did all professional had information (ID). 17. Did all professional had information (ID). 18. Did all professional had information (ID). 19. Did all p							
V Yes No	10. Did all container label information (ID, date, time) agree with the COC?							
A LES LINO	11. Were tests to be performed listed on the COC?							
✓ Yes □ No	12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?							
✓ Yes □ No	13. Was adequate sample volume available?							
✓ Yes No	14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?							
Yes ✓ No	15. Were any samples containers missing/excess (circle one) samples Not listed on CGC?							
Yes No NA	 For VOA and RSK-175 samples, were bubbles present >"pea-size" (%"or 6mm in diameter) 							
	in any of the VOA vials?							
Ycs ∐ No ✓ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?							
Yes □ No ▼NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?							
☐ Yes ☐ No ☑NA	19. Were all applicable NH ₂ /TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?							
☐Yes ☐No ☑NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc)							
	correctly transcribed from the COC into the comment section in LIMS?							
Yes Z No	21. Was the quote number listed on the container label? If yes, Quote #							
Sample Preservation (N	Must be completed for any sample(s) incorrectly preserved or with headspace.)							
Sample(s) NA	were received incorrectly preserved and were adjusted accordingly							
in sample receiving with $\frac{1}{2}$	mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA							
Time of preservation NA	. If more than one preservative is needed, please note in the comments below.							
Sample(s) NA	were received with bubbles >6 mm in diameter.							
Samples(s) NA	were received with TRC \geq 0.5 mg/L (1f #19 is $n\sigma$) and were							
adjusted accordingly in sample receiving with sodium thiosulfate (Na ₂ S ₂ O ₃) with Shealy ID: NA								
SR barcode labels applied	by: RG2 Date: 10/39/2021							
Comments:								



Report of Analysis

Tetra Tech

Foster Plaza 7 661 Anderson Drive Pittsburgh, PA 15220 Attention: Mark Jonnet

Project Name: KSC-CHP
Project Number: 112G09581

Lot Number:**WK02089**Date Completed:11/30/2021

Kathy Smith

12/01/2021 9:18 AM
Approved and released by:
Project Manager II: **Kathy E. Smith**





The electronic signature above is the equivalent of a handwritten signature.

This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

Case Narrative Tetra Tech Lot Number: WK02089

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the Pace Quality Assurance Management Plan (QAMP), applicable Shealy standard operating procedures (SOPs), the 2003 NELAC standard, and Shealy policies. Additionally, the DoD QSM version 5.3 has been followed for these samples, and specifically Table B-15 was followed for all PFAS samples. Any exceptions to the QAMP, SOPs, NELAC standards, the DoD QSM, or policies are qualified on the results page or discussed below.

All QC associated with these samples was in compliance with DOD QSM 5.3 table B-15 and our PFAS SOP.

Correction factors (CF) are used to calculate the original sample concentration. The CF is the inverse of the concentration factor (sample volume / extract final volume) times the dilution factor (DF). For undiluted analysis. For undiluted analysis, the extract is prepared for injection by adding 182 uL of sample extract + 8 uL of reagent water + 10 uL of internal standard solution to a polypropylene autosampler vial. An extra correction factor of 0.91 (182 uL / 200 uL = 0.91) applies. The CF is calculated as follows:

CF = DF * FV / Vo

FV is volume of extract (mL)
Vo is initial sample volume (mL)
DF is dilution factor. For undiluted analysis, DF = 1/0.91.

Sample concentration for aqueous samples:

Concentration (ng/L) = Cs*CF,

$$C_{s} = \frac{\left(\frac{(A_{s} \times C_{is})}{A_{is}}\right) - B}{M1}$$

Where

C_s is on column concentration of target analyte in the sample (ng/L)
C_{is} is concentration of internal standard in the sample (ng/L)
A_s is peak response of target analyte in the sample
A_{is} is peak response of internal standard in the sample
M1 is the average RF from ICAL or the slope from linear regression ICAL
B is the y-intercept from the ICAL

SC DHEC No: 32010001 NELAC No: E87653 NC DENR No: 329 NC Field Parameters No: 5639

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation:

Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, Fecal Coliform SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, Solid Chemical Material: TOC Walkley-Black.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Surrogate recovery for the following samples was outside the upper control limit: WK02089-001, WK02089-003, WK02089-004, WK02089-005. This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Sample Summary

Tetra Tech

Lot Number: WK02089 Project Name: KSC-CHP Project Number: 112G09581

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	CHP-MW0028-042.5-20211029	Aqueous	10/29/2021 1110	10/30/2021
002	CHP-MW0012-007.5-20211029	Aqueous	10/29/2021 1255	10/30/2021
003	CHP-MW0029-042.5-20211029	Aqueous	10/29/2021 1340	10/30/2021
004	CHP-MW0063-045.0-20211029	Aqueous	10/29/2021 1445	10/30/2021
005	CHP-EB-20211029-01	Aqueous	10/29/2021 1500	10/30/2021

(5 samples)

PACE ANALYTICAL SERVICES, LLC

Detection Summary Tetra Tech

Lot Number: WK02089 Project Name: KSC-CHP Project Number: 112G09581

Samp	le Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	CHP-MW0028-042.5-20211029	Aqueous	6:2 FTS	PFAS by ID	2.5	ı	ng/L	5
001	CHP-MW0028-042.5-20211029	Aqueous	PFBS	PFAS by ID	6.1		ng/L	5
001	CHP-MW0028-042.5-20211029	Aqueous	PFPeS	PFAS by ID	5.1		ng/L	5
001	CHP-MW0028-042.5-20211029	Aqueous	PFHxS	PFAS by ID	31		ng/L	5
001	CHP-MW0028-042.5-20211029	Aqueous	PFBA	PFAS by ID	14		ng/L	5
001	CHP-MW0028-042.5-20211029	Aqueous	PFHpA	PFAS by ID	5.4		ng/L	5
001	CHP-MW0028-042.5-20211029	Aqueous	PFHxA	PFAS by ID	14		ng/L	5
001	CHP-MW0028-042.5-20211029	Aqueous	PFOA	PFAS by ID	9.2		ng/L	5
001	CHP-MW0028-042.5-20211029	Aqueous	PFPeA	PFAS by ID	13		ng/L	5
001	CHP-MW0028-042.5-20211029	Aqueous	PFOS	PFAS by ID	6.9		ng/L	5
002	CHP-MW0012-007.5-20211029	Aqueous	PFHxS	PFAS by ID	1.3	I	ng/L	7
002	CHP-MW0012-007.5-20211029	Aqueous	PFBA	PFAS by ID	1.9	I	ng/L	7
002	CHP-MW0012-007.5-20211029	Aqueous	PFPeA	PFAS by ID	1.1	I	ng/L	7
002	CHP-MW0012-007.5-20211029	Aqueous	PFOS	PFAS by ID	19		ng/L	7
003	CHP-MW0029-042.5-20211029	Aqueous	6:2 FTS	PFAS by ID	6.0	I	ng/L	9
003	CHP-MW0029-042.5-20211029	Aqueous	PFBS	PFAS by ID	4.9		ng/L	9
003	CHP-MW0029-042.5-20211029	Aqueous	PFPeS	PFAS by ID	5.1		ng/L	9
003	CHP-MW0029-042.5-20211029	Aqueous	PFHxS	PFAS by ID	29		ng/L	9
003	CHP-MW0029-042.5-20211029	Aqueous	PFBA	PFAS by ID	11		ng/L	9
003	CHP-MW0029-042.5-20211029	Aqueous	PFHpA	PFAS by ID	5.0		ng/L	9
003	CHP-MW0029-042.5-20211029	Aqueous	PFHxA	PFAS by ID	11		ng/L	9
003	CHP-MW0029-042.5-20211029	Aqueous	PFOA	PFAS by ID	7.8		ng/L	9
003	CHP-MW0029-042.5-20211029	Aqueous	PFPeA	PFAS by ID	12		ng/L	9
003	CHP-MW0029-042.5-20211029	Aqueous	PFOS	PFAS by ID	8.7		ng/L	9
004	CHP-MW0063-045.0-20211029	Aqueous	PFBS	PFAS by ID	8.6		ng/L	11
004	CHP-MW0063-045.0-20211029	Aqueous	PFHpS	PFAS by ID	5.5		ng/L	11
004	CHP-MW0063-045.0-20211029	Aqueous	PFPeS	PFAS by ID	9.3		ng/L	11
004	CHP-MW0063-045.0-20211029	Aqueous	PFHxS	PFAS by ID	90		ng/L	11
004	CHP-MW0063-045.0-20211029	Aqueous	PFBA	PFAS by ID	4.7		ng/L	11
004	CHP-MW0063-045.0-20211029	Aqueous	PFHpA	PFAS by ID	4.7		ng/L	11
004	CHP-MW0063-045.0-20211029	Aqueous	PFHxA	PFAS by ID	11		ng/L	11
004	CHP-MW0063-045.0-20211029	Aqueous	PFNA	PFAS by ID	1.4	I	ng/L	11
004	CHP-MW0063-045.0-20211029	Aqueous		PFAS by ID	16		ng/L	11
004	CHP-MW0063-045.0-20211029	Aqueous		PFAS by ID	5.0		ng/L	11
004	CHP-MW0063-045.0-20211029	Aqueous	PFOS	PFAS by ID	180		ng/L	11

(35 detections)

Client: Tetra Tech Laboratory ID: WK02089-001

Description: CHP-MW0028-042.5-20211029

Date Sampled:10/29/2021 1110 Project Name: KSC-CHP
Date Received: 10/30/2021 Project Number: 112G09581

Number: 112G09581

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 11/12/2021 1658 JJG 11/11/2021 1232 22105

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	2.5	I	7.2	3.6	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.6	UQ	7.2	3.6	1.8	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.6	U	7.2	3.6	1.8	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	6.1		3.6	1.8	0.90	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	5.1		3.6	1.8	0.90	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	31		3.6	1.8	0.90	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	14		3.6	1.8	0.90	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	5.4		3.6	1.8	0.90	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	14		3.6	1.8	0.90	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	9.2		3.6	1.8	0.90	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	13		3.6	1.8	0.90	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.6	1.8	0.90	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	6.9		3.6	1.8	0.90	ng/L	1
		otance mits							
13C2_4:2FTS N 2	215 50	-150							
13C2_6:2FTS	140 50	-150							
13C2_8:2FTS 1	133 50	-150							
13C2_PFDoA	102 50	-150							
13C2_PFTeDA	100 50	-150							
13C3_PFBS	96 50	-150							
13C3_PFHxS	110 50	-150							
13C3-HFPO-DA	99 50	-150							
13C4_PFBA	62 50	-150							
4004 PELLA	144 50	450							

Q = Out of holding time	W = Reported on wet weight basis	LOD = L	limit of Detection	D = Dilution > 1	S = MS/MSD failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The	RPD between two GC columns exceeds 40%	I = Estimated result < LOQ and \geq DL	L = LCS/LCSD failure
LOQ = Limit of Quantitation	V = Detected in the method blank	E = Qua	ntitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
13C7_PFUdA		101	50-150		
_					
13C6 PFDA		106	50-150		
13C5_PFPeA		94	50-150		
13C5_PFHxA		108	50-150		

50-150

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C4_PFHpA

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

111

Client: Tetra Tech

Description: CHP-MW0028-042.5-20211029

Project Name: KSC-CHP

Date Sampled:10/29/2021 1110 Date Received: 10/30/2021 Project Number: 112G09581 Laboratory ID: WK02089-001

Matrix: Aqueous

Surrogate	Run 1 A Q % Recovery	cceptance Limits
13C8_PFOA	114	50-150
13C8_PFOS	112	50-150
13C9_PFNA	112	50-150
d-EtFOSA	96	50-150
d5-EtFOSAA	107	50-150
d3-MeFOSAA	110	50-150

LOQ = Limit of Quantitation U = Not detected at or above the LOQ Q = Out of holding time

V = Detected in the method blank N = Recovery is out of criteria W = Reported on wet weight basis E = Quantitation of compound exceeded the calibration range P = The RPD between two GC columns exceeds 40% LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: WK02089-002

Description: CHP-MW0012-007.5-20211029

Date Sampled:10/29/2021 1255 Project Name: KSC-CHP
Date Received: 10/30/2021 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 11/12/2021 1740 JJG 11/11/2021 1232 22105

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3)	763051-92-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.3	1	3.8	1.9	0.94	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.9	1	3.8	1.9	0.94	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.1	1	3.8	1.9	0.94	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	19		3.8	1.9	0.94	ng/L	1
		otance mits							
13C2_4:2FTS	132 50)-150							
13C2_6:2FTS	112 50	-150							
13C2_8:2FTS	121 50	-150							
13C2_PFDoA	107 50)-150							

-	13C2_4:2FTS	132	50-150
	13C2_6:2FTS	112	50-150
	13C2_8:2FTS	121	50-150
	13C2_PFDoA	107	50-150
	13C2_PFTeDA	106	50-150
	13C3_PFBS	109	50-150
	13C3_PFHxS	114	50-150
	13C3-HFPO-DA	115	50-150
	13C4_PFBA	110	50-150
	13C4_PFHpA	113	50-150
	13C5_PFHxA	117	50-150
	13C5_PFPeA	116	50-150
	13C6_PFDA	107	50-150
	13C7_PFUdA	106	50-150

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \ge DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: CHP-MW0012-007.5-20211029

Date Sampled:10/29/2021 1255 Project Name: KSC-CHP

Laboratory ID: WK02089-002 Matrix: Aqueous

Date Received: 10/30/2021

Project Number: 112G09581

13C8_PFOA 115 50-150 13C8_PFOS 114 50-150 13C9_PFNA 118 50-150 d-EtFOSA 92 50-150 d5-EtFOSAA 110 50-150 d3-MeFOSAA 123 50-150	Surrogate	Run 1 A Q % Recovery	Acceptance Limits	
13C9_PFNA 118 50-150 d-EtFOSA 92 50-150 d5-EtFOSAA 110 50-150	13C8_PFOA	115	50-150	
d-EtFOSAA 92 50-150 d5-EtFOSAA 110 50-150	13C8_PFOS	114	50-150	
d5-EtFOSAA 110 50-150	13C9_PFNA	118	50-150	
	d-EtFOSA	92	50-150	
d3-MeFOSAA 123 50-150	d5-EtFOSAA	110	50-150	
	d3-MeFOSAA	123	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ \geq DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: WK02089-003

Description: CHP-MW0029-042.5-20211029

Date Sampled:10/29/2021 1340 Project Name: KSC-CHP
Date Received: 10/30/2021 Project Number: 112G09581

Project Number: 112G09581

Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 11/12/2021 1802 JJG 11/11/2021 1232 22105

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3)	763051-92-9	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	6.0	1	7.8	3.9	2.0	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.9	UQ	7.8	3.9	2.0	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.9	U	7.8	3.9	2.0	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	4.9		3.9	2.0	0.98	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	5.1		3.9	2.0	0.98	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	29		3.9	2.0	0.98	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	11		3.9	2.0	0.98	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	5.0		3.9	2.0	0.98	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	11		3.9	2.0	0.98	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	7.8		3.9	2.0	0.98	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	12		3.9	2.0	0.98	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	2.0	U	3.9	2.0	0.98	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	8.7		3.9	2.0	0.98	ng/L	1
Di	un 1 Accer	otance							
		nits							
13C2_4:2FTS N	229 50	-150							
13C2_6:2FTS	137 50	-150							
13C2_8:2FTS	120 50	-150							
13C2_PFDoA	103 50	-150							
13C2_PFTeDA	96 50	-150							

13C2_4:2FTS	N	229	50-150
13C2_6:2FTS		137	50-150
13C2_8:2FTS		120	50-150
13C2_PFDoA		103	50-150
13C2_PFTeDA		96	50-150
13C3_PFBS		94	50-150
13C3_PFHxS		114	50-150
13C3-HFPO-DA		99	50-150
13C4_PFBA		54	50-150
13C4_PFHpA		108	50-150
13C5_PFHxA		108	50-150
13C5_PFPeA		90	50-150
13C6_PFDA		101	50-150
13C7_PFUdA		104	50-150

LOQ = Limit of QuantitationV = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeDL = Detection LimitQ = Surrogate failureU = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%I = Estimated result < LOQ and \ge DLL = LCS/LCSD failureQ = Out of holding timeW = Reported on wet weight basisLOD = Limit of DetectionD = Dilution > 1S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech

Description: CHP-MW0029-042.5-20211029

Project Name: KSC-CHP

Date Sampled:10/29/2021 1340

Date Received: 10/30/2021

Project Number: 112G09581

Laboratory ID: WK02089-003 Matrix: Aqueous

Surrogate		eptance .imits
13C8_PFOA	111 50	50-150
13C8_PFOS	117 50	50-150
13C9_PFNA	115 50	50-150
d-EtFOSA	117 50	50-150
d5-EtFOSAA	118 50	50-150
d3-MeFOSAA	123 50	50-150

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

 $\begin{aligned} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ge DL \\ D &= Dilution > 1 \end{aligned}$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Matrix: Aqueous

Client: Tetra Tech Laboratory ID: WK02089-004

Description: CHP-MW0063-045.0-20211029

Date Sampled:10/29/2021 1445 Project Name: KSC-CHP
Date Received: 10/30/2021 Project Number: 112G09581

Run Prep Method Analytical Method Dilution Analysis Date Analyst Prep Date Batch
1 SOP SPE PFAS by ID SOP QSM B-15 1 11/12/2021 1812 JJG 11/11/2021 1232 22105

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3) 763051-92-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.8	UQ	7.5	3.8	1.9	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.8	U	7.5	3.8	1.9	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	8.6		3.8	1.9	0.94	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	5.5		3.8	1.9	0.94	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	9.3		3.8	1.9	0.94	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	90		3.8	1.9	0.94	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	4.7		3.8	1.9	0.94	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	4.7		3.8	1.9	0.94	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	11		3.8	1.9	0.94	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.4	1	3.8	1.9	0.94	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	16		3.8	1.9	0.94	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	5.0		3.8	1.9	0.94	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.9	U	3.8	1.9	0.94	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	180		3.8	1.9	0.94	ng/L	1
Surrogate Q % Re	ecovery Lir	otance mits							
13C2_4:2FTS N		-150							
13C2_6:2FTS		-150							
13C2_8:2FTS		-150							
13C2_PFDoA		-150							
13C2_PFTeDA		-150							
13C3_PFBS		-150							
13C3_PFHxS		-150							
13C3-HFPO-DA		-150							
13C4_PFBA		-150							
13C4_PFHpA		-150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

13C5_PFHxA

13C5_PFPeA

13C6_PFDA

13C7_PFUdA

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

110

94

110

103

50-150

50-150

50-150

50-150

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech

Description: CHP-MW0063-045.0-20211029

Date Sampled:10/29/2021 1445 Date Received: 10/30/2021 Laboratory ID: WK02089-004

Matrix: Aqueous

Project Name: KSC-CHP
Project Number: 112G09581

Surrogate	Run 1 A Q % Recovery	cceptance Limits			
13C8_PFOA	111	50-150			
13C8_PFOS	118	50-150			
13C9_PFNA	117	50-150			
d-EtFOSA	101	50-150			
d5-EtFOSAA	112	50-150			
d3-MeFOSAA	126	50-150			

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ

Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

DL = Detection Limit I = Estimated result < LOQ and \geq DL D = Dilution > 1 Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

Client: Tetra Tech Laboratory ID: WK02089-005

Description: CHP-EB-20211029-01

Date Sampled:10/29/2021 1500 Project Name: KSC-CHP Date Received: 10/30/2021 Project Number: 112G09581

Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date F	Batch
1	SOP SPE	PFAS by ID SOP QSM B-15	1	11/12/2021 1823 JJG	11/11/2021 1232 2	22105

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3) 763051-92-9	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.5	UQ	6.9	3.5	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	3.5	U	6.9	3.5	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	1.8	U	3.5	1.8		ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	1.8	U	3.5		0.87	-	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	1.8	U	3.5	1.8 1.8	0.87	ng/L ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	1.8	U	3.5		0.87		1
		•				1.8	0.87	ng/L	
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	1.8	U	3.5	1.8	0.87	ng/L	1
Surrogate Q % R		otance mits							
13C2_4:2FTS)-150							
13C2_6:2FTS N	169 50	-150							
13C2_8:2FTS	119 50)-150							
13C2_PFDoA	99 50)-150							
13C2_PFTeDA	100 50	-150							
13C3_PFBS	107 50	-150							
13C3_PFHxS)-150							
13C3-HFPO-DA)-150							
13C4_PFBA)-150							
13C4_PFHpA		-150							
13C5_PFHxA)-150							
13C5_PFPeA)-150							
13C6_PFDA)-150							
13C7_PFUdA)-150							
1307_1104A	100 30	, 150							

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

LOQ = Limit of Quantitation

Q = Out of holding time

U = Not detected at or above the LOQ

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V = Detected in the method blank

W = Reported on wet weight basis

N = Recovery is out of criteria

LOD = Limit of Detection

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

DL = Detection Limit

D = Dilution > 1

I = Estimated result < LOQ and \geq DL

Q = Surrogate failure

L = LCS/LCSD failure

S = MS/MSD failure

Client: Tetra Tech Laborator

Description: CHP-EB-20211029-01

Date Sampled:10/29/2021 1500

Project Name: KSC-CHP

Date Received: 10/30/2021

Project Number: 112G09581

Laboratory ID: WK02089-005 Matrix: Aqueous

Surrogate	Run 1 A Q % Recovery	cceptance Limits	
13C8_PFOA	109	50-150	
13C8_PFOS	110	50-150	
13C9_PFNA	114	50-150	
d-EtFOSA	89	50-150	
d5-EtFOSAA	104	50-150	
d3-MeFOSAA	114	50-150	

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
Q = Out of holding time

V = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis

E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection

$$\begin{split} DL &= Detection \ Limit \\ I &= Estimated \ result < LOQ \ and \ \underline{>} \ DL \\ D &= Dilution > 1 \end{split}$$

Q = Surrogate failure L = LCS/LCSD failure S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)



PFAS by LC/MS/MS - MB

Sample ID: WQ22105-001 Batch: 22105

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 11/11/2021 1232

Parameter	Result	Q	Dil	LOQ	LOD	DL	Units	Analysis Date
9CI-PF3ONS	4.0	U	1	8.0	4.0	2.0	ng/L	11/15/2021 1346
11CI-PF3OUdS	4.0	U	1	8.0	4.0	2.0	ng/L	11/15/2021 1346
8:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	11/15/2021 1346
6:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	11/15/2021 1346
4:2 FTS	4.0	U	1	8.0	4.0	2.0	ng/L	11/15/2021 1346
GenX	4.0	U	1	8.0	4.0	2.0	ng/L	11/15/2021 1346
ADONA	4.0	U	1	8.0	4.0	2.0	ng/L	11/15/2021 1346
EtFOSA	4.0	U	1	8.0	4.0	2.0	ng/L	11/15/2021 1346
EtFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	11/15/2021 1346
MeFOSAA	4.0	U	1	8.0	4.0	2.0	ng/L	11/15/2021 1346
PFBS	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFDS	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFHpS	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFNS	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFPeS	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFHxS	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFBA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFDA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFDoA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFHpA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFHxA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFNA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFOA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFPeA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFTeDA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFTrDA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFUdA	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
PFOS	2.0	U	1	4.0	2.0	1.0	ng/L	11/15/2021 1346
Surrogate	Q % R	ec	Accep Lin	tance nit				
13C2_4:2FTS	103	3	50-	150				
13C2_6:2FTS	110)	50-	150				
13C2_8:2FTS	100			150				
13C2_PFDoA	92		50-					
13C2_PFTeDA	91		50-					
13C3_PFBS	108	3	50-	150				
13C3_PFHxS	114	ļ	50-	150				
13C3-HFPO-DA	101		50-	150				
13C4_PFBA	106	,)	50-	150				
13C4_PFHpA	107	7	50-	150				
13C5_PFHxA	105	5	50-	150				
13C5_PFPeA	108	3	50-	150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

* = RSD is out of criteria

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

+ = RPD is out of criteria

PFAS by LC/MS/MS - MB

Sample ID: WQ22105-001 Batch: 22105

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 11/11/2021 1232

Surrogate	Q % Rec	Acceptance Limit	
13C6_PFDA	99	50-150	
13C7_PFUdA	102	50-150	
13C8_PFOA	104	50-150	
13C8_PFOS	99	50-150	
13C9_PFNA	104	50-150	
d-EtFOSA	100	50-150	
d5-EtFOSAA	105	50-150	
d3-MeFOSAA	105	50-150	

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: WQ22105-002 Batch: 22105

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 11/11/2021 1232

Danamatan	Spike Amount	Result	D.1	0/ Dag	%Rec	Analysis Data
Parameter	(ng/L)	(ng/L) Q	Dil	% Rec	Limit	Analysis Date
9CI-PF3ONS	15	16	1	109	70-150	11/12/2021 1524
11CI-PF3OUdS	15	17	1	110	70-150	11/12/2021 1524
8:2 FTS	15	17	1	111	67-138	11/12/2021 1524
6:2 FTS	15 15	16	1	107	64-140	11/12/2021 1524
4:2 FTS	15	17	1	114	63-143	11/12/2021 1524
GenX ADONA	32 15	37 17	1 1	115 114	70-150 70-150	11/12/2021 1524 11/12/2021 1524
EtFOSA	16	18	1	112	70-150 70-150	11/12/2021 1524
EtFOSAA	16	16	1	99	61-135	11/12/2021 1524
MeFOSAA	16	15	1	96	65-136	11/12/2021 1524
PFBS	14	15	1	103	72-130	11/12/2021 1524
PFDS	15	18	1	114	53-142	11/12/2021 1524
PFHpS	15	16	1	105	69-134	11/12/2021 1524
PFNS	15	15	1	97	69-127	11/12/2021 1524
PFPeS	15	16	1	105	71-127	11/12/2021 1524
PFHxS	15	15	1	104	68-131	11/12/2021 1524
PFBA	16	17	1	107	73-129	11/12/2021 1524
PFDA	16	18	1	110	71-129	11/12/2021 1524
PFDoA	16	18	1	110	72-134	11/12/2021 1524
PFHpA	16	17	1	108	72-130	11/12/2021 1524
PFHxA	16	17	1	107	72-129	11/12/2021 1524
PFNA	16	17	1	106	69-130	11/12/2021 1524
PFOA	16	17	1	106	71-133	11/12/2021 1524
PFPeA	16	17	1	109	72-129	11/12/2021 1524
PFTeDA	16	17	1	108	71-132	11/12/2021 1524
PFTrDA	16	17	1	105	65-144	11/12/2021 1524
PFUdA	16	18	1	113	69-133	11/12/2021 1524
PFOS	15	15	1	102	65-140	11/12/2021 1524
Surrogate	Q % Rec	Acceptance Limit				
13C2_4:2FTS	104	50-150				
13C2_6:2FTS	119	50-150				
13C2_8:2FTS	117	50-150				
13C2_PFDoA	109	50-150				
13C2_PFTeDA	103	50-150				
13C3_PFBS	111	50-150				
13C3_PFHxS	112	50-150				
13C3-HFPO-DA	117	50-150				
13C4_PFBA	111	50-150				
13C4_PFHpA	112	50-150				
13C5_PFHxA	113	50-150				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - LCS

Sample ID: WQ22105-002

Batch: 22105 Analytical Method: PFAS by ID SOP QSM B-15 Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 11/11/2021 1232

Surrogate	Q % Rec	Acceptance Limit		
13C6_PFDA	106	50-150		
13C7_PFUdA	109	50-150		
13C8_PFOA	111	50-150		
13C8_PFOS	115	50-150		
13C9_PFNA	117	50-150		
d-EtFOSA	101	50-150		
d5-EtFOSAA	112	50-150		
d3-MeFOSAA	116	50-150		

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - Duplicate

Sample ID: WK02089-001DU Batch: 22105

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 11/11/2021 1232

Parameter	Sample Amount (ng/L)	Result (ng/L)	Q	Dil	% RPD	%RPD Limit	Analysis Date
9CI-PF3ONS	ND		U	1	0.00	20	11/12/2021 1709
11CI-PF3OUdS	ND		U	1	0.00	20	11/12/2021 1709
8:2 FTS	ND		U	1	0.00	20	11/12/2021 1709
6:2 FTS	2.5		U	1	0.00	20	11/12/2021 1709
4:2 FTS	ND		U	1	0.00	20	11/12/2021 1709
GenX	ND		U	1	0.00	20	11/12/2021 1709
ADONA	ND		U	1	0.00	20	11/12/2021 1709
EtFOSA	ND		U	1	0.00	20	11/12/2021 1709
EtFOSAA	ND		U	1	0.00	20	11/12/2021 1709
MeFOSAA	ND		U	1	0.00	20	11/12/2021 1709
PFBS	6.1	6.0		1	3.0	20	11/12/2021 1709
PFDS	ND		U	1	0.00	20	11/12/2021 1709
PFHpS	ND		U	1	0.00	20	11/12/2021 1709
PFNS	ND		U	1	0.00	20	11/12/2021 1709
PFPeS PFHxS	5.1	4.9		1	2.3	20	11/12/2021 1709
	31	30		1	2.8 0.94	20	11/12/2021 1709
PFBA PFDA	14 ND	14	U	1 1	0.94	20 20	11/12/2021 1709 11/12/2021 1709
PFDoA	ND		U	1	0.00	20	11/12/2021 1709
PFHpA	5.4	5.2	U	1	3.8	20	11/12/2021 1709
PFHxA	14	13		1	11	20	11/12/2021 1709
PFNA	ND	13	U	1	0.00	20	11/12/2021 1707
PFOA	9.2	9.2	O	1	0.080	20	11/12/2021 1709
PFPeA	13	13		1	0.24	20	11/12/2021 1709
PFTeDA	ND		U	1	0.00	20	11/12/2021 1709
PFTrDA	ND		U	1	0.00	20	11/12/2021 1709
PFUdA	ND		U	1	0.00	20	11/12/2021 1709
PFOS	6.9	6.9		1	0.040	20	11/12/2021 1709
Surrogate	Q % Rec	Accept Lim	ance it				
13C2_4:2FTS	N 224	50-1	50				
13C2_6:2FTS	N 163	50-1	50				
13C2_8:2FTS	116	50-1	50				
13C2_PFDoA	111	50-1					
13C2_PFTeDA	110	50-1					
13C3_PFBS	102	50-1					
13C3_PFHxS	123	50-1					
13C3-HFPO-DA	106	50-1					
13C4_PFBA	62	50-1					
13C4_PFHpA	124	50-1					
•							
13C5_PFHxA	117	50-1					
13C5_PFPeA	95	50-1	50				

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - Duplicate

Sample ID: WK02089-001DU Batch: 22105

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 11/11/2021 1232

Surrogate	Q % Rec	Acceptance Limit
13C6_PFDA	111	50-150
13C7_PFUdA	113	50-150
13C8_PFOA	125	50-150
13C8_PFOS	122	50-150
13C9_PFNA	128	50-150
d-EtFOSA	97	50-150
d5-EtFOSAA	118	50-150
d3-MeFOSAA	127	50-150

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and \geq DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

PFAS by LC/MS/MS - MS

Sample ID: WK02089-002MS Batch: 22105

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous
Prep Method: SOP SPE

Prep Date: 11/11/2021 1232

Sample Amount (ng/L)	Spike Amount (na/L)	Result (na/L)	0	Dil	% Rec	%Rec Limit	Analysis Date
							11/12/2021 1751
							11/12/2021 1751
				1			11/12/2021 1751
	14			1			11/12/2021 1751
ND	14	15		1	111	63-143	11/12/2021 1751
ND	30	33		1	112	70-150	11/12/2021 1751
ND	14	16		1	112	70-150	11/12/2021 1751
ND	15	17		1	116	70-150	11/12/2021 1751
ND	15			1	105	61-135	11/12/2021 1751
				1			11/12/2021 1751
				1			11/12/2021 1751
							11/12/2021 1751
							11/12/2021 1751
							11/12/2021 1751
							11/12/2021 1751
							11/12/2021 1751
							11/12/2021 1751
							11/12/2021 1751
							11/12/2021 1751 11/12/2021 1751
							11/12/2021 1751
							11/12/2021 1751
							11/12/2021 1751
							11/12/2021 1751
				1			11/12/2021 1751
ND				1	99	65-144	11/12/2021 1751
ND	15	16		1	108	69-133	11/12/2021 1751
19	14	32		1	99	65-140	11/12/2021 1751
Q % Re	Acc c I	eptance _imit					
122	5	50-150					
142	5	50-150					
115	5	50-150					
98	5	50-150					
98							
	5	50-150					
117							
111							
113							
	(ng/L) ND ND ND ND ND ND ND ND ND N	(ng/L) (ng/L) ND 14 ND 14 ND 14 ND 14 ND 14 ND 30 ND 14 ND 15 ND 15 ND 13 ND 14 ND 14 ND 14 ND 14 ND 14 ND 15 ND 15	(ng/L) (ng/L) (ng/L) ND 14 15 ND 14 13 ND 14 14 ND 14 15 ND 14 15 ND 30 33 ND 14 16 ND 15 17 ND 15 16 ND 15 14 ND 13 14 ND 14 13 ND 15 17 ND 15 16 ND 15	(ng/L)	(ng/L)	ND	ND

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

 \star = RSD is out of criteria + = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

PFAS by LC/MS/MS - MS

Sample ID: WK02089-002MS Batch: 22105

Analytical Method: PFAS by ID SOP QSM B-15

Matrix: Aqueous Prep Method: SOP SPE

Prep Date: 11/11/2021 1232

Surrogate	Q % Rec	Acceptance Limit	
13C6_PFDA	108	50-150	
13C7_PFUdA	102	50-150	
13C8_PFOA	116	50-150	
13C8_PFOS	120	50-150	
13C9_PFNA	118	50-150	
d-EtFOSA	94	50-150	
d5-EtFOSAA	111	50-150	
d3-MeFOSAA	116	50-150	

LOQ = Limit of Quantitation

U = Not detected at or above the LOQ

N = Recovery is out of criteria

DL = Detection Limit

I = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

LOD = Limit of Detection

* = RSD is out of criteria

+ = RPD is out of criteria

Chain of Custody and Miscellaneous Documents

PAGE OF	PALL AMAINTEN TO CONTACT:	106 Vantau Paine Or.	dombin, SC			1/K02089	COMMENTS								- Constant	153,36	DATE TIME	DATE	1830a1 MAO	AVZH FORM NO. TRNUS-001
имвек No. 3240	PHONE NUMBER LABORATORY N (412) 931-8632 PALC ANAL	•	دسس ن	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	омтениева Семина с с с с с с с с с с с с с с с с с с с		× к				X					1. RECEIVED BY	2. RECEIVED BY	3. RECEIVED BY	OPY) PINK (FILE COPY)
CHAIN OF CUSTOBY	Mook Sound	Chuck Sorden	CARRIER/WAYBILL NUMBER			DEPTH (FT)	MATRIX (ETC.) COLLECT COLLECT (D) SARB (C) TMOD	40 45 GW G	150158	1 22 07	40 SQ 6W	1 1 2 6					DATE TIME		12:30:31 M20	YELLOW (FIELD COPY)
tra Tech, Inc.	PROJECT NO: 1/2 GUTOJO 1/2 GUTOJO	13			SIGNUAL AT MI RUSH TAT M T-24 PF. 14 Bhr. (X 72 hr) 17 day 14 day) (TOT	DATE SAMPLE ID	PLO CHP-MN0038-0425-30311029	1255 CAP-MYDARIA-0075-2011029	1340 KHP-MUNDA-042,5220111329	1445 CHP-MUCHS-0250 "24 1029	1500 CHP-EB-2011029-61					1. RELINQUISHED BY	2. RELINQUISHED BY	305	DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE)



Samples Receipt Checklist (SRC) (ME0018C-15) Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020 Page 1 of 1

Sample Receipt Checklist (SRC)

Client: tetra Tech	Cooler Inspected by/date: KDRW / 11/02/2021 Lot #: WK02089					
Means of receipt: Pace Client UPS / FedEx Other:						
7.14						
	✓ Yes No NA 2. If custody seals were present, were they intact and unbroken?					
	pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA					
Original temperature upon receipt / Derived (Corrected) temperature upon receipt						
Method: Temperature Blank Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C						
Method of coolant: ✓ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None						
	 If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one). 					
✓ Yes No NA	is the commercial courier's packing slip attached to this form?					
e	Were proper custody procedures (relinquished/received) followed?					
	Were sample IDs listed on the COC?					
	7. Were sample iDs listed on all sample containers?					
	8. Was collection date & time listed on the COC?					
	Was collection date & time listed on all sample containers?					
	10. Did all container label information (ID, date, time) agree with the COC?					
	11. Were tests to be performed listed on the COC?					
☑Yes □No	12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?					
✓ Yes No	13. Was adequate sample volume available?					
✓ Yes No	14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?					
☐ Yes ☑ No	15. Were any samples containers missing/excess (circle one) samples Not listed on COC?					
Ves DNA ZINA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?					
	 Were all DRO/metals/nutrient samples received at a pH of ≤ 2? 					
U Yes UNO ✓ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?					
☐ Yes ☐ No ☑NA	19. Were all applicable NH ₂ /TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?					
□Yes □No ☑NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc)					
L 183 L NO MAY	correctly transcribed from the COC into the comment section in LIMS?					
	21. Was the quote number listed on the container label? If yes, Quote #					
Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)						
Sample(s) NA were received incorrectly preserved and were adjusted accordingly						
in sample receiving with No.	AmL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA					
Time of preservation NA						
Sample(s) NA	were received with bubbles >6 mm in diameter.					
Samples(s) NA	were received with TRC > 0.5 mg/L (If #19 is no) and were					
adjusted accordingly in sam	uple receiving with sodium thiosulfate (Na ₂ S ₂ O ₃) with Shealy ID: NA					
SR barcode labels applied b	y; KORW Date: 11/02/2021					
Comments:						

Note: Sample ID change for Laboratory Report WK02089

Sample CHP-MW0012-007.5-20211029 collected at 12:55 on 10/29-2021 should be CGO-MW0012-007.5-20211029

APPENDIX D PHOTOGRAPHIC LOG

Fire Station #1 – LOC 19

NASA PFAS Assessments

Kennedy Space Center, Florida

PHOTO 1

DATE:

12/09/2021

DIRECTION:

South

TAKEN BY:

S. Damphousse

DESCRIPTION:

View of building exterior facing south toward ambulance bays



PHOTO 2

DATE:

12/09/2021

DIRECTION:

West

TAKEN BY:

S. Damphousse

DESCRIPTION:

View of building facing west toward fire engine bays



Fire Station #1 – LOC 19

NASA PFAS Assessments

Kennedy Space Center, Florida

РНОТО 3

DATE:

12/09/2021

DIRECTION:

Northwest

TAKEN BY:

S. Damphousse

DESCRIPTION:

View of building exterior facing northwest



PHOTO 4

DATE:

12/09/2021

DIRECTION:

Southeast

TAKEN BY:

S. Damphousse

DESCRIPTION:

View of exterior of building facing southeast



Fire Station #1 – LOC 19

NASA PFAS Assessments

Kennedy Space Center, Florida

РНОТО 5

DATE:

12/09/2021

DIRECTION:

East

TAKEN BY:

S. Damphousse

DESCRIPTION:

View of storage area along south side of building



PHOTO 6

DATE:

12/09/2021

DIRECTION:

Northwest

TAKEN BY:

S. Damphousse

DESCRIPTION:

View of storage cage along south side of building



Fire Station #1 – LOC 19

NASA PFAS Assessments

Kennedy Space Center, Florida

PHOTO 7

DATE:

12/09/2021

DIRECTION:

Northwest

TAKEN BY:

S. Damphousse

DESCRIPTION:

View of south side of building taken from southeast property corner



PHOTO 8

DATE:

12/09/2021

DIRECTION:

West

TAKEN BY:

S. Damphousse

DESCRIPTION:

Building trench drain outfall to ditch in southeast property corner, with overgrowth in the pipes



Fire Station #1 – LOC 19

NASA PFAS Assessments

Kennedy Space Center, Florida

РНОТО 9

DATE:

12/09/2021

DIRECTION:

North

TAKEN BY:

S. Damphousse

DESCRIPTION:

View east side of building with flags marking proposed lithologic boring location



PHOTO 10

DATE:

12/09/2021

DIRECTION:

Southeast

TAKEN BY:

S. Damphousse

DESCRIPTION:

View of southeast corner of the property where fire trucks were historically parked



Fire Station #1 – LOC 19

NASA PFAS Assessments

Kennedy Space Center, Florida

PHOTO 11

DATE:

12/09/2021

DIRECTION:

North

TAKEN BY:

S. Damphousse

DESCRIPTION:

View within interior of ambulance bay with trench drain in floor



PHOTO 12

DATE:

12/09/2021

DIRECTION:

Northeast

TAKEN BY:

S. Damphousse

DESCRIPTION:

View within interior of fire engine bay with trench drain in floor.

Engine 1 is a Pierce Pumper fire truck with a 30 gallon top mounted foam tank.



Fire Station #1 – LOC 19

NASA PFAS Assessments

Kennedy Space Center, Florida

PHOTO 13

DATE:

12/09/2021

DIRECTION:

N/A

TAKEN BY:

S. Damphousse

DESCRIPTION:

View of control panel on side of Engine 1



PHOTO 14

DATE:

12/09/2021

DIRECTION:

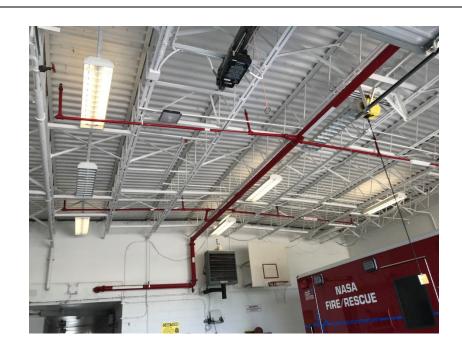
N/A

TAKEN BY:

S. Damphousse

DESCRIPTION:

View within interior of ambulance bay showing water sprinkler system



APPENDIX E KSCRT MEETING MINUTES AND ACTION ITEM – OCTOBER 2022

Revision 0 Meeting Minutes for October 5th and 6th, 2022

Attendees:

- 1. Bruce Moore/FDEP
- 2. Mike Deliz/NASA
- 3. Ryan O'Meara/NASA
- 4. Deda Johansen/NASA
- 5. Anne Chrest/NASA
- 6. Natasha Darre/NASA
- 7. Chris Adkison/NASA
- 8. Tim Appleman/NASA
- 9. Michelle Moore/NEMCON
- 10. Mark Jonnet/Tetra Tech

- 11. Alex Murphy/Tetra Tech
- 12. Chris Pike/ Tetra Tech
- 13. Mark Speranza/Tetra Tech
- 14. Andrew Walters/Tetra Tech
- 15. Jennifer Gootee/AECOM
- 16. Linnea King Clark/AECOM
- 17. Richard Smith/HGL
- 18. Howard Fowler/HGL
- 19. James (Jim) Montague/HGL

2210-M01 Bruce Moore/FDEP

Program Update

Discussion: The #1 issue at the Florida Department of Environmental Protection (FDEP) is the staffing situation. There are fourteen positions in the federal facilities program currently available. Some hires are imminent. Environmental Administrator Laura Barrett resigned. The goal is to fill the Environmental Administrator position by the end of October. Billy Hessman joined in May as a professional geologist (PG) II position. A variety of positions are open and need to be filled. If there is an urgent matter, please call Bruce directly and he can talk in the moment about it. The routine review process may take a while.

NASA inquired if funding was the issue or just not enough people were applying. FDEP stated it has been hard to attract and retain staff. FDEP is still using the three contractors for outside review and will lean heavily on them in the short term.

samples will be collected from drainage ditches. Additional DPT groundwater samples will be collected, and more monitoring wells installed and sampled.

NASA is preparing to notify nearby residents of potential off-site migration. Information sessions are being planned for early 2023. discussed the process for getting authorization for possible sampling on neighboring property. FDEP asked whether NASA has reached out to the Department of Health yet? NASA has not. FDEP will initiate contact at the State level.

2210-M08 Mark Jonnet/ Tetra Tech

Fire Station #1 (SWMU #116), Sewage Treatment Plant #1 and Sludge Disposal Area (SWMU #117) PFAS Sites Assessment Update

Objective:

Present results to date for per- and polyfluorinated alkyl substances (PFAS) soil evaluation, soil cores, PFAS sediment evaluation, PFAS groundwater evaluation, PFAS surface water evaluation and path forward.

Discussion:

Fire Station #1(FS1) was constructed in 1964, housed crews and served as a maintenance and storage location for spent or expired fire extinguishers. It was formerly known as Fire Station #4. The Sewage Treatment Plant #1 (STP1) encompasses approximately 40 acres and includes STP1, Former Polishing Pond, Former Sludge Disposal Area, Former Spray Field, and the Paint and Oil Locker (POL) SWMU 067.

Tetra Tech presented the PFAS sampling results to date of the Fire Station #1, STP #1 and Sludge Disposal Area sites. Data for the Base Support Building (SWMU #014) was included since the PFAS plumes appear to be commingled.

Data generated by Site Assessment activities to date and prior results were screened against EPA's May 2022 tap water Regional Screening Levels (RSLs) for groundwater, resident RSL for soil, and

against the State of Florida human health Surface Water Screening Levels for surface water. There are currently no screening criteria for sediment. RSLs are available for 6 PFAS compounds: perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluoronanoic acid (PFNA), perfluorobutanesulfonic acid (PFBS), perfluorohexane sulfonic acid (PFHxS) and hexafluoropropylene oxide dimer acid (HFPO-DA; trade name GenX).

Data summaries include all samples collected to date in the area of FS1 and STP1. Samples collected prior to 12/2021 were collected by others. Field activities were performed in accordance with FDEP Standard Operating Procedures, PFAS sampling guidelines (Michigan Department of Environmental Quality) and the KSC Sampling and Analysis Plan. Global Positioning System coordinates were collected for each sample location. Quality assurance/quality control samples were collected due to the ubiquitous nature of PFAS. Pace Analytical Services analyzed PFAS samples and reported 28 PFAS compounds.

Shallow soil samples (0-0.5 and 0.5-2 feet below land surface [ft. bls]) were collected at five locations at FS1 and nine STP1/Sludge Disposal locations. Results exceeded the residential PFOS RSL in 6 of the 28 samples. Deeper soil samples were collected from one soil boring each at FS1 and STP1. Two intervals at FS1 had PFOS detections exceeding the residential RSL. Results from the STP1 boring were less than the residential RSL. There are no soil results with a PFAS result greater than the commercial RSL. The lithologic descriptions from the soil cores were used in selection of depth intervals for direct push technology (DPT) groundwater sampling.

Sediment samples were collected from nine locations at STP1/Sludge Disposal Area and one location in the Region 1 (Industrial Area) Stormwater Pond (also called the Gator Pond). There were detections of PFOS in seven of the ten samples, and one detection of PFHxS. There are currently no State or Federal screening criteria for sediment.

For FS1, of the 126 groundwater samples from varying depths, 44 detected results were greater than the PFOA RSL, 60 detected results exceeded the PFOS RSL, 17 detected results exceeded the PFNA RSL, 13 detected results exceeded the PFBS RSL, and 38 detected

results exceeded the PFHxS RSL. Seventy-six samples were analyzed for HFPO-DA and there were no detections.

For STP1/Sludge Disposal Area, of the 218 groundwater samples from varying depths, 115 detected results exceeded the PFOA RSL, 122 detected results exceeded the PFOS RSL, 41 detected results exceeded the PFNA RSL, 2 detected results exceeded the PFBS RSL, and 86 detected results exceeded the PFHxS RSL. One hundred seventy-six samples were analyzed for HFPO-DA and there were no detections.

Twenty-four surface water samples were collected from stormwater ditches around FS1, STP1 and the Sludge Disposal Area. A sample was collected at the northwest corner of the Gator Pond in both August 2021 and March 2022. PFOA, PFOS and PFHxS were detected in all 26 samples, PFBS was detected in 24 samples, and PFNA in 18 samples. HFPO-DA was analyzed in 19 samples and detected in none. The State of Florida has surface water screening levels (SWSLs) for PFOA and PFOS. One PFOA sample result exceeded its SWSL (500 ng/L) and 24 PFOS results exceeded its SWSL (10 ng/L). The two results for the Gator Pond did not indicate a significant seasonal difference.

The Site Assessment for FS1 and STP1 will continue in phases. The upcoming phase emphasizes understanding groundwater and surface water interaction, as well as the extent of PFAS-affected groundwater. Potential human health risk by exposure to PFAS-affected soil is being managed by interim Land Use Control Implementation Plans (LUCIPs).

To show the correlation between proposed groundwater and surface water sampling locations, the image on Slide 34 displays PFOS groundwater sample locations less than 10 ft bls compared to PFOS RSL and surface water PFOS results compared to PFOS SWSL. The Team will continue plume delineation using DPT groundwater sampling based on RSLs. Monitoring wells will be installed adjacent to surface water locations with staff gauges. The co-located wells and surface water points will be sampled periodically. Groundwater level measurements and staff gauges will be read, and data evaluated to determine discharge from groundwater to surface water or from surface water to groundwater.

The image on Slide 35 displays surface water PFOS results. Future sampling will be focused on the flow path for Region 1 stormwater to discharge to the Banana River Lagoon and nearby points in the lagoon. Sample locations will include influent into the Gator Pond, effluent from the Gator Pond, associated borrow pits that are part of the stormwater management system, tributaries into Buck Creek, locations within Buck Creek, junction of Buck Creek and Banana River Lagoon with offsets north and south, isolated borrow pits northeast of Gator Pond to determine impacts, and four locations along Banana River Lagoon that will correspond to DPT locations on the shore.

Tetra Tech will email FDEP the drawing showing the proposed monitoring well locations (2210-A06).

Results: Action Item 2210-A06

DAY 2

2210-M09 Michelle Moore/NEMCON

Meeting Minutes and Miscellaneous Items

Team consensus was reached that Revision 1 of the meeting minutes and action/decision items for the September 2022 Team meeting will become final. Team members acknowledged and did not object to the fact that these meeting minutes may become public as part of a final report at a later date (2210-D12).

Open action items were reviewed and closed at the October 2022 KSCRT meeting:

Launch Complex 39B (LC39B) (SWMU 009) - Revisit Team consensus (Decision 1810-D13) on weir installation based on permits date expiration and Year 2 performance monitoring results. Team consensus had been reached to suspend the weir installation since chlorinated volatile organic compound (CVOC) concentrations adjacent to the pond were below their respective groundwater cleanup target levels (GCTLs) and to re-evaluate the need for the weir prior to expiration of permits from the St. Johns River Water Management District (SJRWMD) and U.S. Army Corps of Engineers (USACE) on 11 July 2023.

KSCRT Status of Open Action Items

Action Item No.	Minutes Reference	Responsible Team Member	Action item	Status
2210-A06	2210-M08	NASA	Fire Station #1 (SWMU #116), Sewage Treatment Plant #1 and Sludge Disposal Area (SWMU #117) PFAS Sites Assessment Update: The image on Slide 35 displays surface water PFOS results. Future sampling will be focused on influent into the Gator Pond, effluent from the gator pond, associated borrow pits that are part of the stormwater management system, tributaries into Buck Creek, locations within Buck Creek, junction of Buck Creek and Banana River with offsets north and south, isolated borrow pits northeast of gator pond to determine impacts, and four locations along Banana River that will correspond to DPT locations. Tetra Tech will email FDEP the locations of the proposed monitoring well locations.	Open